



Jochen Fahrenberg

Wilhelm Wundt (1832–1920)

Introduction, Quotations, Reception,
Commentaries, Attempts at Reconstruction

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Commentaries, Attempts at Reconstruction

Sensory Physiology, Neuropsychology, Animal Psychology,
General Psychology, Cultural Psychology, Ethics,
Epistemology and Methodology, Philosophy (Metaphysics)

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Frontispice: Wilhelm Wundt · Fotolia

Wilhelm Wundt about 1875–1880

This photograph was taken by Brokesch during Wundt's early years in Leipzig about 187-1880 (see Bringmann, Ungerer and Ganzer, 1980.)

Unless otherwise noted, German quotations were translated into English by the author with valuable assistance provided by Dr. Frank Illing and Aaron Woeste.

Foreword to the English Edition¹

“American textbook accounts of Wundt now present highly inaccurate and mythological caricatures of the man and his work” (Blumenthal, 1970, p. 11). Three decades later, Blumenthal modified his judgement by hopefully stating: “But it is a caricature that current historians are now working to correct...” (1997, p. 118). However, with very few exceptions, the general verdict still remains valid. Assessing Wundt’s eminence as an outstanding scholar reveals a fundamental contradiction. Quoting Blumenthal again: “At the beginning of psychology’s modern era... stands the formidable instigating presence of Wilhelm Wundt (1832–1920), the strongest initial force behind that beginning and still the most prolific academic psychologist of all time.” (1997, p. 117).

Even in Germany, a distancing from Wundt’s work was already noticeable during his lifetime. How did this break of tradition, which was caused by ignoring the foundation that Wundt laid in psychology, come about? Wundt is still remembered in many textbooks as the founder of the first laboratory for experimental psychology. However, neither his original and comprehensive conception of experimental and cultural psychology, nor his advanced methodology and multimethod strategies are explained. In light of the continuing theoretical controversies concerning various trends in psychology as well as opposing research aims and schools, it is worth remembering the advanced conception that Wundt posited. He was convinced that human reason does not seek to attain a theoretical conception of the world that conforms to the *principle of parsimony*, but rather seeks a *consistent* and *non-contradictory* representation of it. Thus, instead of merely depicting a variety of psychological aspects and unconnected parameters, theory in psychology should aim to conceive of (1) *complementary frames of reference* that are categorically different, but necessary to represent the *coordination* of psychological and physiological processes that constitute the psycho-physical unity, and (2) theoretical constructs related to the higher *integration* of motivational (dynamic), emotional, sensory, and cognitive processes, as expounded in Wundt’s *apperception theory of psychical processing*. Wundt was a neurophysiologist before becoming a psychologist, and he initially focused on experimental psychology and then later cultural psychology. In addition, he wrote sophisticated works on ethics, epistemology, and philosophy. Since Wundt, which other psychologist has been able to emulate his nearly universal theoretical horizon or intensive research program that lasted for more than 50 years?

As an assistant to Hermann Helmholtz in Heidelberg, Wundt researched motor and vegetative reflex activity and sensory physiology. He supervised courses in experimental physiology for students of medicine and wrote a textbook on physiology (*Lehrbuch der Physiologie des Menschen*, 1865) and a handbook on medical physics (*Handbuch der medizinischen Physik*, 1867a) before being inspired by Gustav Theodor Fechner (1860, 1861) to turn to experimental psychology. The connection between physiology and psychology with a strong inclination toward philosophy was so attractive to the universities in Zurich, and later in Leipzig, that he was appointed professor of *inductive philosophy* at the University of Zurich in 1874 and professor of *philosophy* in Leipzig in 1875, despite not having studied philosophy. At that time, there was a strong interest in interdisciplinary mediation between the empirical sciences and philosophy, which Wundt embodied.

Grundzüge der physiologischen Psychologie (“Principles of physiological Psychology”), Wundt’s most frequently quoted work, appeared in 1874 and contained a summary of his research and teaching at Heidelberg University. 1874 was a remarkable year for several other reasons as well. In that year, Franz Brentano published his programmatic work entitled *Psychologie vom empirischen Standpunkt. Von der Klassifikation der psychischen Phänomene* (“Psychology from an Empirical Standpoint. On the Classification of Psychical Phenomena”), the precursory treatise to the emerging phenomenological psychology advanced by his student Edmund Husserl. 1874 was also the year in which Brentano’s short-term student and eventual doctoral candidate Sigmund Freud held his first, but unfortunately undocumented, lecture at a Viennese student’s association. The lecture presumably dealt with teleological analysis, i.e. the principle of purpose in psychology (Fahrenberg, 2015a, p. 775). Furthermore, Gustav Theodor Fechner held his last lectures in Leipzig in 1874 entitled *Über psycho-physische Messmethoden* (“On Psycho-Physical Measurement”) and *Über die Grundbeziehung des materiellen und des geistigen Prinzips* (“On the Basic Relationship Between the Material and

¹ I would like to thank Dr. Frank Illing for his careful formal and stylistic review of the manuscript and content suggestions, as well as Aaron Woeste for his insightful copyediting of the English translation.

Mental Principle”). In 1875, Wundt held lectures in Leipzig on the psychology of language, anthropology, logic, and the theory of science. In 1879, decisive steps were taken to establish the *Institute for Experimental Psychology* at the University of Leipzig, the first of its kind and thus the beginning of psychology as an academic discipline.

There is no doubt that Fechner and Wundt as well as Brentano and Freud fundamentally influenced the development of psychology around the world, not only in German-speaking countries. However, further inquiry is needed into their intellectual lines of tradition and influences, in particular by Johann Friedrich Herbart, Immanuel Kant, and Gottfried Wilhelm Leibniz. Their explicit and fundamentally different views on psychology invite analysis of their specific guiding principles, assumptions about human nature, and philosophical presuppositions, as well as those of modern-day psychologists. Wundt cited and critically discussed philosophical and epistemological postulates about psychology proposed by Kant and Herbart, and it is obvious from his work that he was much more influenced by Leibniz.

There is ample evidence that Wundt transformed *philosophical* conceptions proposed by Leibniz, e.g. his ideas about elementary perception and apperception as well as motivation and self-consciousness, into *psychological* research and experimentation. The influence is even more evident in Wundt’s principles of epistemology, which include the notion of psychophysical parallelism (instead of mind–body dualism), continuity of development (evolution), causality, and purpose, as well as perspectivism.

Wundt’s intellectual tradition fundamentally differs from the tradition of English sensualism and empiricism as represented by John Locke, George Berkeley, and David Hume. This opposition should be pointed out from the beginning since Wundt’s contrasting philosophical background might prove to be a major source of misconceptions about his psychological work and methodology. Wundt was highly critical of empiricism, the mechanics of elementary associationism, and the doctrine that posited the metaphysical dualism of body and soul.

On the title page of *Beiträge zur Theorie der Sinneswahrnehmung* (“Contributions to the Theory of Sensory Perception,” 1862), his first book on psychology, Wundt quoted Leibniz: “Nihil es in intellectu quod non fuerit in sensu, nisi intellectu ipse” (“Nothing is in the intellect that was not first in the senses, *except the intellect itself*,” *Nouveaux essais*, 1765). With his ironic addendum, Leibniz rejected John Locke’s plain sensualism (empiricism) and view that the intellect is merely a blank slate. This epigraph is unique since Wundt refrained from such epigraphs in his later works. Wundt explained that he rejected the assumption of “innate ideas” and teleology insofar as a purpose in nature is assumed; however, he emphasized that logic, categories, and laws of reasoning are not yet included in the sensory impressions, and human beings are capable of voluntary action based on motives and values. Wundt’s psychology cannot be understood without acknowledging his epistemology and its system of categories and principles. Leibniz’s influence on Wundt’s psychology has often been neglected, especially by the Anglo-American history of psychology (cf. Fahrenberg, 2016a, 2017).

Wundt elaborated on the epistemological distinctions between mental science and natural science by referring to essential *categories* of knowledge specific to his conception of psychology. He delineated fundamental categories with which to designate human beings, including the concepts of *subject* and *voluntary action* based on *values*. These categories, which are totally inadequate in the natural sciences, are essential in the humanities, and psychology would suffer greatly from a narrowing to neuro-reductionism and the associated category mistakes.

One of the main objectives here is to keep Wundt’s guiding principle in mind, i.e. that psychologists in particular should remain conscious of the epistemological and philosophical presuppositions of their research and professional practice, and therefore openly and critically discuss their individual “metaphysics” or belief systems, which tend to be kept private.

There are further obstacles to understanding Wundt’s legacy, such as his style of writing, thinking, and use of the scientific terminology of his time. His writing in German is shaped by the Latin grammar of the Heidelberg Gymnasium, which often uses subordinate clauses, and some of the essential terms do not have direct equivalents in English. This makes his writing demanding, even for contemporary German readers. Furthermore, Wundt prefers to discuss controversies in a dialectic manner by taking opposing viewpoints to illuminate the underlying contradictory arguments. This perspectivism is precisely the style of thinking that Wundt considers characteristic of Leibniz.

Critical evaluations of the Anglo-American reception of Wundt’s work by Kurt Danziger (Canada), Saulo Araujo (Brazil), and Blumenthal (United States) remain largely valid. But how could the lack of awareness of Wundt have changed given the fact that his primary works have not been translated into English? To date, there is *no* adequate English translation of Wundt’s essential works. Titchener translated only the first few chapters of the *Grundzüge der physiologischen Psychologie* on neurology and neurophysiology, but omitted Wundt’s *psychology*. The 6th edition (1908-1910, 3 vols.), based on four decades of research in Leipzig, was never translated. Translations of other major works are also missing, including *Völkerpsychologie* (“Cultural Psychology,” 1st ed., 1900-1920, 10 vols.), *Logik und Wissenschaftslehre* (“Logic and Theory of Science,” 1st ed. 1880-1883; 4th ed., 1919-1921, 3 vols.), and *System der Philosophie* (“System of Philosophy,” 1st ed., 1889a; 4th ed., 1919b, 2 vols.). However, there is one exception: *Ethik* (Ethics, 1st ed., 1886; 4th ed., 1912a, 2 vols.) was partly translated by Washburn in 1901 based on the first edition.

The present book is an abridged version of the German edition published in 2018, which provides the first-ever overview of Wundt's entire work, as well as a detailed analysis of its reception history. It contains hypotheses about the attitudes and motives underlying the dynamics of intellectual change that led to Wundt becoming nearly an outsider during his lifetime, while many one-sided and speculative trends and schools advanced by his contemporaries prevailed. It is worth noting that none of Wundt's many assistants or PhD students in Leipzig, such as Cattell, Külpe, Meumann, Münsterberg, Spearman, or Titchener, were willing or able to present the essence of his entire body of work in a didactically appropriate overview or as a comprehensive textbook. In 1979, around the centenary of the founding of the first laboratory in Leipzig, there was greater interest in Wundt and an increase in publications about him. However, the contributions often referred to institutional and biographical details as well as "Wundtiana." Thus, only very few articles dealt with the entirety of his original theoretical conception or his sophisticated epistemology and methodology.

This book attempts to provide a consistent overview of Wundt's neuropsychology, general psychology, cultural psychology, ethics, and epistemology, as well as to eliminate basic misunderstandings. Wundt's *Principles of Physiological Psychology* is by no means a textbook of *Physiological Psychology*. Wundt used physiological methods as an adjunct to experimental methods in psychology. However, he did not consider physiological concepts to have any *explanatory* relevance. Wundt's 10-volume *Völkerpsychologie* (wrongly translated as *Folk Psychology*) is *not* a work of ethnology, but aims to elaborate a *developmental theory of mind*, which, for instance, seeks to understand the genesis of thinking via the development of language. The *theory of apperception* and the *developmental theory of mind* are central guiding ideas in Wundt's body of work.

An overview of Wundt's complete body of work and a summary of his main teachings will greatly facilitate access to his work and research. Wundt's terminology was coined 150 years ago, and in some respects it needs to be updated into modern German and then translated into English, ensuring that it still conveys specific notions and connotations that do not have exact equivalents in English. The Glossary included in Chapter 3, the book's main chapter, compiles a number of crucial terms used by Wundt, as well as their suggested translations. Chapter 3 also provides an introduction to Wundt's system of principles and basic theoretical constructs. This is followed by sections on sensory psychology, neuropsychology, psychophysiology, animal psychology, general psychology, and cultural psychology. Specific attention is devoted to Wundt's *apperception theory* of psychical (mental) processing, which connects general and cultural psychology. Furthermore, Chapter 3 contains sections on ethics, epistemology, methodology, and philosophy. Several sections were considerably shortened for the English edition, including the discussion of methodological issues, i.e. the controversy about measurement in psychology, as well as parts of the philosophical discussion. Likewise, the detailed account of Wundt's reception in Germany contained in Chapter 4 has also been shortened, and some additional English sources and secondary references have been added. Chapter 5 reviews the few existing attempts at reconstructing certain aspects of Wundt's psychology and specifically discusses the reconstruction of his *theory of apperception*. Finally, Chapter 6 summarizes essential contributions that originated in Wundt's psychology, epistemology, and methodology, and discusses their continued relevance.

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1 Introduction and Overview

1. 1 In Remembrance of Wilhelm Wundt

After Wundt's death, the remembrances and obituaries that were published showed how greatly the founder of experimental psychology, author of *Cultural Psychology* (Völkerpsychologie) and philosopher (with his works on ethics, logic and epistemology) had been respected. But did his essential guiding ideas gain any permanent influence on the further development of psychology? These ideas included the process analysis of psychological activity, the developmental theory of the mind based on cultural psychology, supplementation of experimental and qualitative methodology, and the demand for a critical examination of implicit philosophical presuppositions in empirical psychology. How could Wundt as the founder of experimental psychology and the first permanent laboratory with a research program become a kind of outsider in psychology during his lifetime? Is his work sufficiently accessible?

When the *Gesellschaft für experimentelle Psychologie* (German Society for Experimental Psychology) was founded in 1904, the assembly gave a greeting address to the then 72-year-old senior professor Wundt at the suggestion of Oswald Külpe, Wundt's former assistant in Leipzig. Georg Elias Müller from Göttingen was elected president of the Society at the assembly and maintained this position until 1927 (Gundlach und Stöwer, 2004). Even more significant than Wundt's personal absence, were the relatively few appearances of his name and the obvious neglect of his research program in the published congress papers, making it clear that by 1904 the era of Wundt was over from the viewpoint of the academic psychologists. Wundt now appeared as an important figure in the *history* of psychology worthy of a special greeting address.

The motives behind this conspicuous distance are unknown. Was it that he did not want to become a member of that Society or that he was not directly asked? In those years, Wundt was already engaged in writing his 10-volume work on cultural psychology published under the title *Völkerpsychologie*, and he had broadened his theoretical and methodological horizon to an almost universal range. To him, G. E. Müller's psychophysics and memory research must have seemed quite narrowly conceived.

Wundt was an honorary member in 12 scientific societies in Germany and abroad as well as a member of the *Pour le Mérite* order for arts and sciences and a foreign or corresponding member of 13 academies. He was also an honorary citizen of Leipzig and Mannheim. Between 1875 and 1919, Wundt had 186 PhD students, including 19 from the United States, England and Canada, and at least 24 from Russia, Romania, and other Eastern European countries. The lists of his PhD students, assistants and foreign guests included many names that later became well known.

Bernhard Rost writes about Wundt's funeral (1920, p. 14): "On September 4, 1920, he was cremated at the Leipzig Südfriedhof (Southern Cemetery). I also attended the emotionally moving funeral ceremony. Attendance was low. A disgrace to the German people not to have honored one of their greatest minds." – The obituaries written by his Leipzig colleagues (1922/23) are far from being a consistent appreciation of Wundt and his lifework. The first article is an inconsistent and stylistically poor contribution by his successor at Leipzig University, Felix Krueger, who appears barely able to convey Wundt's achievement as a pioneer in cultural psychology. Other contributions generally remain quite vague, giving a strangely superficial or one-sided picture. In contrast, Emil Kraepelin (1920) wrote a masterly articulated obituary and Aloys Fischer (1932) later commemorated Wundt on the occasion of the centenary of his birthday.

Distancing and the Break of Tradition

The retrospective on the 100-year anniversary of the *German Society of Psychology* (ed. Rammsayer und Troche, 2005), which intended to be representative, has special significance for two reasons. First, these reviews cover a century of the history of psychology in Germany. Second, the authors are former presidents of this Society, which means that their views can be considered to represent the views of a majority. Although Wundt is the psychologist most frequently listed in the index of names, he is often mentioned only casually, inaccurately or remarkably one-sidedly – in the sense of a "natural scientist stereotype" (cf. Chapter 4).

Fischer (1932), the philosopher and educational psychologist, wrote one of the few tributes in commemoration of Wundt's 100th birthday. "That Wundt, who in the course of his life was an authority of international prestige, has disappeared from the discussion a few years after his death, so that he seems to be unknown, almost as if he had never lived, speaks not so much against him as it does against the epigones of the World War period whose thinking focuses narrowly on issues of

necessity and power... If the younger generations, even students, do not want to know Wundt, then the impression of him as a fashionable celebrity whose short-lived fame was already incomprehensible and undeserved and whose work, barren and vain, sank together with him into the tomb of oblivion grows stronger. Wundt has not been confined to empirical research, but starting from the empirical sciences, he arrived at a philosophical standpoint that afforded him an overview of the entire intellectual world of his era and made him impressive and worthy of admiration as one of the last encyclopaedic thinkers, which are not uncommon in the history of German philosophy. On the occasion of his last birthday and immediately after his death, Wundt was thanked and complimented as the great psychologist and creator of the first laboratory for experimental psychology ... but even in this respect ... there were more restrictive concerns and distance than an honest and thorough understanding of the fundamental importance of his lifework, especially for present-day psychology. The lasting merit of his work and school of thought is the rigour of the methodical requirements for psychological research.... He, who wants to study mankind as a psychologist, cannot abandon the connection between biology and history – or as Wundt put it, physiology and psychology – which Wundt first established.” (pp. 353-358).

Wundt's Legacies

Wundt is still quite well known as the founder of psychology as a discipline or at least as the founder of the first laboratory. But what do current professional psychologists associate with him in addition to this? Perhaps only his experimental psychology or maybe also his "other legacy," namely his "Völkerpsychologie," which is often mistaken for *ethnology* rather than recognized as *cultural psychology*, thus forming the basis of a psychological developmental theory of the mind. The year 1979 was the centenary of the founding of Wundt's laboratory in Leipzig and accordingly, the *XXIInd International Congress of Psychology* took place in Leipzig the following year. A series of lectures was held and a number of books contained essays on Wundt's psychology, which revived interest in his complete work. After this relative peak (cf. Chapter 4), an increased interest in the history of psychology continued into the following decades. However, neither a thoroughly elaborated, concise biography of Wundt's life *and* work, nor an annotated edition of his outstanding books or an adequate overview representing his basic intentions and achievements in the theory and methodology of psychology emerged during this time.

In her retrospective *Wilhelm Wundt und seine Schüler* (Wilhelm Wundt and his Students), Meischner-Metge (2003) conveyed numerous historical details about the founding of the institute, doctoral students, publications and Wundt's relationships with his outstanding "students" Kraepelin, Külpe, Meumann, and Münsterberg. She also inquires into the reception history of his lifework, and agrees with Klemm (1922, p. 107) that Wundt probably had disciples, but no school (cf. Chapter 4). Wundt himself rejected the term *Leipziger Schule* (Leipzig School) in a letter to Külpe (1895, cf. Meischner-Metge, p. 156). Wundt was not a professor who sought to gather disciples around him. Wundt wanted to develop psychology in a state of composure and with high standards as an independent subject within philosophy. Within limits, he supported applied research together with the Leipzig Teacher's Association in the educational field ... At the Leipzig Institute, Wundt embodied a kind of gray eminence, which was kindly characterized by the authors of the Festschrift as 'unintendedly authoritative' and whose influence ended with his retirement.... The fact that important premises and viable approaches were forgotten for a long period of time did not avail the development of psychology (pp. 165-166).

In the preface of the essay collection *Wilhelm Wundts anderes Erbe. Ein Missverständnis löst sich auf* (Wilhelm Wundt's Other Legacy. Dissolving a Misunderstanding), Jüttemann (2006b) mentions three components of Wundt's intellectual legacy: the undisputed merit of establishing psychology as an institutionalized science and helping it to gain worldwide recognition; the resolutely antimaterialistic foundation of psychology as part of the humanities; and lastly, the establishment of a historical cultural and social psychology. "Together, these three components of his legacy, which must be considered as a whole, form the integrative model of psychology as a part of the humanities, which Wundt not only theoretically derived from the concept of mind, but also put into practice to an astonishing extent as a research program."

"From a historical perspective, Wundt earned almost exclusive praise over many years for founding the institute, such that the myth arose that he was the prototype of an experimenter and an uncompromising pioneer of psychology oriented towards the natural sciences. This is a huge misconception, which may even be called tragic considering some of its consequences. This misconception can be regarded as an expression of a distorted reconstruction and, at least partly, a consciously denied 'truth about Wundt,' which is only gradually dissolving. The aim of this book is to accelerate this process of clarification while at the same time rediscovering Wundt's 'other legacy' and bringing it recognition, despite, as is to be expected, now outdated terms and inadequate methodical conceptions. However, this book can at best initiate an effort towards this goal." (pp. 9-10). The problematic interactions between Wundt and Külpe as well as other obstacles appear to have also contributed to this misconception. "But since the *Zeitgeist* prevalent in the field of psychology at the time favored the orientation towards and guidance by the natural sciences, there was an extreme divergence between the perception of the overpowering founding father on the one hand, who could absolutely not be ignored by his successors, yet whose prestige they had to maintain in the interest of the field of study, and the image of Wundt as a scientist within the humanities with an antimaterialistic and antipositivistic orientation ... On the other hand, they decidedly rejected him and his ten-volume *Völkerpsychologie*, which they preferred to ignore, as well as his advocating for a concept of psychology that is methodologically open and geared

towards the whole subject. There were two approaches to solving the problem that arose from this discrepancy, both of which were widely used ... One approach consisted in a partial or complete ignorance of Wundt's lifework, which was sometimes equivalent to a denial. The other approach, which was temporarily applied with great success, consisted in converting Wundt from a scholar of the humanities who was partly active in the natural sciences to a pure natural scientist. This produced a huge misconception, which has been considerably difficult to rectify because—as another example of the irony of fate – the myth of Wundt as the prototypical positivist serves the interests of certain political issues within the profession in the eyes of some representatives and continues to persist to this day.” (pp. 26-27).

Jüttemann (2006b, 2007a) decidedly highlights Wundt's original conception of psychology and his legacy with its great “integrative potential.” He criticizes both the prevalent stereotype of the “natural scientist Wundt” and the “distorted history of reception.” Jüttemann regards Wundt primarily as a scholar of the humanities, and even as the actual founder of a psychology that is conceived as part of the humanities. However, this portrayal of the ‘other Wundt’ could entail new difficulties: How is it to be understood that, parallel to the publishing of the first volumes of the *Völkerpsychologie*, Wundt expanded the *Grundzüge der physiologischen Psychologie* (Principles of physiological Psychology (1902-1903) to three volumes and went beyond a detailed account of neurology and neurophysiology in trying to develop a *neuropsychological modeling* of the apperception process through further elaboration of the central theoretical foundation of his *general* psychology? From Wundt's point of view, this is not an irreconcilable contradiction, but rather stems from complementary perspectives on the psychophysical unity, i.e. his “perspectivistic monism.”

How can Wundt's *other* legacy be updated without abandoning his *first* legacy? To combine both as Wundt conceived of and tried to elaborate them in his research is the more sophisticated, albeit difficult way. Writing about Wundt's relevance for today's psychology also requires the reconstruction of his guiding ideas and their mediating potential in modern terminology. This includes neuropsychology, psychophysics and experimental sensory psychology as well as Wundt's view of animal psychology and the ontological continuum of evolution that seemed strange to many scholars of the humanities at the time, including Wundt's students.

1. 2 Objectives

So far there is no overview of Wundt's entire work. Its extent and interdisciplinary horizon, as well as his sophisticated writing style constitute a demanding task for today's readers. However, a reasonable understanding of the complete work is necessary to investigate the reception of his ideas and their relevance to today's discussions about the foundations of psychology and ongoing controversies in theoretical psychology more precisely. Furthermore, there are additional reasons to attempt such an overview. The year 2020 is the centenary of Wundt's death, meaning that a number of recollections and commemorations are expected. There is, for example, an initiative for establishing a *Wilhelm Wundt Foundation at Grossbothen* near Leipzig in order to set up a research facility at Wundt's last place of residence intended to systematically complement the projects carried out at the *Leipzig University Archives* and the *Leipzig Institute of Psychology*. In both respects, the following overview may be useful. In the past, there was never an attempt to write a comprehensive account that covers both his biography and his entire body of scientific work. Although such an account of Wundt's life and work cannot be accomplished here, the present book will convey contextual information and details aimed at this goal. An abbreviated biographical outline, however, is essential in order to provide background information about his family, education, professional activities, social attitudes, beliefs, and intellectual characteristics (cf. Chapter 2).

The outline of the main part in eight Chapters (3. 2 - 3. 9) corresponds to Wundt's fields of research, namely neuropsychology and the primary fields of psychology, as well as ethics, epistemology, and philosophy. Each chapter includes extensive quotations from Wundt's work and sections on methodology and the contemporary reception of his basic concepts. The overview includes several elaborations, i. e. on the system of categories and the controversy about measurement in psychology. Chapter 3. 9 is summarized by referring to Wundt's plea for a closer connection between psychology and philosophy as a necessary precondition for critical reflection on philosophical presuppositions present in empirical psychology.

Chapter 4 deals with the reception of Wundt's work since 1858 and is based on contemporary reviews and textbooks as well as a number of recent sources and some bibliometric data. This chapter is mainly based on a previous study entitled *Wilhelm Wundt – Gründervater der Psychologie und Aussenseiter?* (Wilhelm Wundt – Founding Father of Psychology and Outsider?, Fahrenberg, 2011). Since this comprehensive documentation is easily accessible on the internet, extensive quotations and commentaries will not be repeated here (Fahrenberg, 2011, pp. 105-133, documentation pp. 231-623). Based on this resource, hypotheses were developed to interpret Wundt's significant loss of influence after the turn of the century in 1900 (pp. 143-175). Occasional cross references, a summary of the findings, and a number of more recent references since 2011 will suffice here. Since the results of bibliometric analysis on Wundt's reception have been previously provided, they are presented here only briefly. It is worth mentioning that, compared to the earlier presentation, a modified assessment of certain aspects of Wundt's conception was attained by further studying his work. The crosslinks between Wundt's general psychology

and his cultural psychology (Völkerpsychologie) are now seen more clearly, as is the essential influence of Leibniz on Wundt's epistemology and methodology. Chapter 4 concludes with a renewed commentary about the conspicuous break of tradition.

Chapter 5 reviews previous attempts to reconstruct parts of Wundt's theory of science and of specific concepts in psychology. Particular importance is assigned here to the theoretical construct of *apperception* and Wundt's system of epistemological principles (Prinzipienlehre). The theory of apperception and the system of epistemological principles are of fundamental significance because they constitute the common basis for Wundt's general and cultural psychology. There are additional domains in Wundt's conception of psychology where a reconstruction using modern terminology should be pursued. Such concepts include Wundt's theory of motivation (volition), theory of language, and comprehensive account of common motives in cultural development. In this respect, only a few references can be provided since a careful reconstruction that adequately reflects Wundt's intentions would require interdisciplinary cooperation.

The final Chapter 6 aims to describe the essence of Wundt's work and provides a summary of what constitutes the continued relevance of Wundt's conception of psychology.

1. 3 Approaches to Wundt's Work

Contexts and Principles

Wundt's empirical psychology can only be understood in the context of his epistemology, which he developed in parallel starting in 1862 and systematically elaborated and published in the revised editions of *Logik und Wissenschaftslehre* (Logic and Theory of Science, 4th ed., 3 volumes, 1919-1921). Hardly any other psychologist has dealt so intensely with these complicated issues and the variety of seemingly incompatible positions (even in ethics and logic) as Wundt did. The postulates of his epistemology, methodologically explained in his *system of principles* (Prinzipienlehre), are original. Therefore, they cannot simply be subsumed under one of the main schools in epistemology like idealism, materialism, and positivism, or their derived versions, which Wundt criticised extensively, nor under the monist or dualist interpretation of the psychical-physical relationship ("mind-body problem"). The modern framing of physicalistic-reductionistic standpoints or neuroreductionism would have been equally unacceptable to him.

Wundt coined the concept of *psychophysical parallelism*, but he differs from other theorists. In following Leibniz's thinking, Wundt decidedly links the idea of the parallelism of psychical and physical processes with an epistemological and categorical distinction: the physical processes, e.g. neurophysiology, have to be investigated and explained from the point of view of *natural causality*; the investigation of psychical processes also requires *analysis* with respect to the ends and means formulated in the *principle of purpose*. Otherwise, psychologists could not attain adequate access to and understanding of voluntary action (intentional acts). Causal and teleological analysis complement each other in the conception of the psychophysical unity of man. Wundt, therefore, demands a coordinated strategy of both causal and teleological analysis, since the principle of cause and the principle of purpose constitute two aspects of the fundamental *law of sufficient reason* first recognized by Leibniz.

Wundt also writes about "complementary points of views" in many other contexts. Today, one could point to the *principle of complementarity* coined by Niels Bohr. However, Bohr was referring to the wave-particle problem in the theory of light in physics, and his later attempts at generalizing this idea were only partly convincing (Bedau und Oppenheim, 1961; Fahrenberg, 2013a). Thus, the term *perspectivity* (*perspectivism*) is more suitable for highlighting complementary reference systems based on fundamentally different categories. The concept of *perspective* was also introduced by Leibniz, however not in the context of his reflections on parallelism (cf. Chapter 3. 9).

Guiding Principles

Wundt's principles take either the form of *philosophical postulates* giving absolute presuppositions about scientific thinking, e.g., categories of space and time, substance and actuality (change), cause and purpose, or *epistemological principles* that could eventually be more or less revised according to further analyses and experience. Some of the most important postulates and epistemological principles are presented here in brief. Extensive citations and comments will follow in later chapters.

Psychology is *not* a science of the individual "soul". According to Wundt, *Seele* (psyche) is another term for inner experience that is in continuous flow. For an understanding of Wundt's psychology, his *postulate of actuality* should be mentioned from the outset. This *process theory* has far-reaching consequences for the definition of psychology because the actively organizing and motivating processes are no longer traced back and explained by assuming a transcendent soul or an underlying "metaphysical substance." Thus, not only the traditional reference and belief in the metaphysical concept of "soul" are absent in Wundt's psychology, but also the concepts of "Ego," "self" or "acting agent." The individual personality is the "unity of feeling, thinking and willing, in which the will appears as the bearer of all other elements." Personality means a "self-conscious being, acting with a consistent and selective will," and it includes "the freedom and responsibility of the will"

in an ethical sense. Wundt conceives of *consciousness* as the entire content of the immediate experience, i.e. the formation of representations from sensory impressions in the “coming and going of representations (ideas) and feelings.” He assumes that there is a continuum of conscious processes with various degrees of clarity and he discusses dreams and hypnosis, as well as unnoticed neurophysiological processes, but he rejects the conception of “the unconscious” because there is no methodically reliable access to it (cf. Chapters 3.7 and 3.8).

According to Wundt, one could say with sufficient certainty that nothing happens in our consciousness that does not find its physical basis in certain physiological processes. However, psychology cannot be reduced to physiology. Physiological methods are helpful and therefore important tools for psychophysics, research on emotions, and other fields of empirical psychology, but they remain principally inadequate for the essential task of psychology. Man, as a “thinking and willing subject,” cannot be explained in terms provided by the *natural sciences*. Psychology, instead, requires specific categories and independent epistemological principles, especially with respect to the analysis of voluntary and purposeful action. Such inquiries are basic to the humanities (*Geisteswissenschaften*), but alien to physiology and natural science.

“We want to call the entry of an idea into the inner field of vision *perception*, its entry into the focus (or the attention field) *apperception*.” Apperception is Wundt’s central theoretical concept. He distinguishes between two meanings of apperception: First, a clear representation in contrast to a vague, mere perception, and second, the inclusion of such sensory representations into self-consciousness. Here, Wundt is aligned with two of Leibniz’s assumptions, namely that there is a continuum between the unnoticed “little perceptions” and apperception as an inclusion of sensory impressions in the ongoing process of consciousness, whereby self-consciousness and individuality emerge. This dynamic process is influenced by man’s active striving (*appetitus*). First and foremost, apperception refers to the control of selective attention. A more generalized notion of apperception denotes a motivated and integrative process. Sensory impressions and other mental representations, feelings, and volitional activity are selected, analyzed, combined, and expressed in various ways, as well as evaluated and directed, not merely “processed,” but “creatively synthesized.” Apperception is an active processing, representing, and orienting, superimposed on sensory impressions and passive associations, and eventually initiating voluntary action. With respect to this multi-modal process, Wundt seeks to develop descriptive and experimental methods suited to differentiating motivational, cognitive, and emotional aspects, as well as coordinated neurophysiological functions in order to elaborate a comprehensive process theory.

Wundt’s apperception theory is an excellent example in the history of ideas of how the views of an eminent philosopher and universal thinker such as Leibniz and his thoughts about perception and apperception, consciousness and “striving,” parallelism and the perspectivity of thought, were transformed by a psychologist and neurophysiologist into empirical psychological concepts, and possibly, operational definitions suited to experimental psychology and aimed at understanding the complex integrative performance in consciousness and voluntary action. Wundt often mentions Leibniz, but does not comment on him in detail until 1917 when he published an essay on Leibniz.

According to Wundt, it is not the individual elements, but their links (“psychical connections”) in the integrative apperceptive performance and voluntary orientation that constitute the main subject of psychology. Many of Wundt’s guiding ideas converge in two concepts, namely in the generalized *theory of apperception* based on his experimental psychology, and in his *psychological developmental theory of the mind* derived from his empirical cultural psychology. The *apperception theory* and the *system of principles* constitute the common theoretical and methodological basis of both these fields.

In his work *Die Psychologie im Beginn des zwanzigsten Jahrhunderts* (Psychology at the Beginning of the 20th Century, 1904/1913), Wundt extensively explains the development from philosophical to empirical psychology in the 17th, 18th and 19th centuries in the context of the history of ideas, and highlights the prevailing ontological way of thinking by saying that one could set up apodictic sentences about God and the world, and even about the soul of man, without attending to the actual mental experiences at all (p. 180). Next, Wundt distinguishes between two important currents in more recent psychology, namely (1) *experimental psychology*, which developed into Fechner’s psychophysics under the influence of the natural sciences (nerve and brain physiology as well as sensory physiology), and (2) *comparative psychology* and *cultural psychology*. – Later, in his theory of science, Wundt presented his thematically ordered systematics of psychology in detail (1921, pp. 144-299, cf. Chapter 3. 8. 2).

Reflections on Wundt

There is a maxim that states when discussing epistemological and methodological controversies participants should clarify their standpoint – at least roughly – in order to enable others to evaluate their arguments within the given context.

Dealing with methodological questions – both with respect to the psychophysiological research in the laboratory and in academic teaching – gives rise over time to one’s own perspective. This is all the more true for someone who is from a generation in which training in the method of psychological interpretation, i.e. principles derived from hermeneutics and from psychoanalysis, along with experimental psychology, was an unquestioned part of the study of psychology, a course of study which was much more comprehensive at that time. The exam (Diploma in Psychology) included a number of secondary

subjects that were taught in other institutes or faculties, such as philosophy, educational science, sociology, physiology, ethology (animal psychology), and psychopathology. The experience of distinct perspectives and methods certainly shapes one's understanding of psychology.

During my own studies – as some of my existing lecture notes 1957-1961 prove – several of Wundt's positions were presented, such as the definitions of attention and consciousness, apperception, experimental psychology, and other topics, as well as his interest in cultural development. However, this did not result in a systematic understanding of Wundt's general psychology or cultural psychology, not to mention the fact that Wundt's theory of science was completely omitted from textbooks. Wundt's psychology and philosophy, ideas, and principles, were largely forgotten. Later, in my own research work, Wundt's three-dimensional theory of emotions and the psychophysiological methods became important, as did the multi-method assessment, the notion of psychophysical parallelism, and consequently, the complementarity of reference systems.

It was only after these academic years that I undertook a more thorough reading of Immanuel Kant's *Anthropologie in pragmatischer Hinsicht* (Anthropology from a Pragmatic Point of View, 1798) and the question emerged regarding the reception of these thoughts by later psychologists. Despite its title, given the essence of his concise and succinct methodological critique and his range of psychological subjects, Kant's book could be regarded as the first textbook on psychology. Thus, the question regarding Kant's influence on Wundt arose. Apparently, Kant's psychological treatise was not appropriately received during or after Wundt's time (Fahrenberg, 2004a, 2004b, 2008, 2011; Sturm, 2009).

Wundt's views are attractive and inspiring for the following reasons:

- the critical realism and the demand for critical reflection on philosophical presuppositions in empirical psychology and methodology;
- the heuristics in the idea of psychophysical parallelism (with a monist orientation) and the coordinated taking of perspectives between psychical processes and their neurophysiological bases (epistemological dualism);
- the system of specific categories and epistemological principles in psychology (mental science) with respect to consciousness and cultural psychology as opposed to reductionism and physicalistic views in neuroscience;
- the intention to develop multimodal theoretical constructs and multimethod research strategies;
- the occasional scepticism with regard to a hasty involvement in applied psychology without sufficient evaluation of the scientific foundations;
- the openness to psychological aspects of ethics, including professional ethics.

Initially, I encountered some difficulties in understanding Wundt's conception with respect to the postulate of *psychical causality* and the *voluntaristic orientation* in his psychology. In both respects, it turned out to be useful to go back to Leibniz and read philosophical interpretations that deal with the difficult topic of cause and purpose. Although Wundt's considerations are more sophisticated, one has to agree with him that physical processes can be explained sufficiently with regard to their causality, whereas higher psychical processes, like voluntary action, require the concept of purpose. Without taking into account the subject's intention (will), many of the behavioral activities cannot be adequately interpreted. A theory of volitional processes is incomplete if it does not include assertions about the dynamism of these processes: An entelechy, an innate instinct, needs, the "selfish genes", and similar metaphors. In contrast to this, Wundt's "voluntaristic" assumptions are psychologically more differentiated, for instance through the demarcating of his motivation theory from the philosophy of naturalism and vitalism.

1. 4 Previous Publications by the author about Wilhelm Wundt and Theoretical Psychology

- (2008). Die Wissenschaftskonzeptionen der Psychologie bei Kant und Wundt als Hintergrund heutiger Kontroversen (*Scientific Concepts of Psychology by Kant and Wundt as a Background to Today's Controversies*).
- (2011). Wilhelm Wundt: Pionier der Psychologie *und* Aussenseiter? (Wilhelm Wundt: Pioneer of Psychology and Outsider?).
- (2012). Wilhelm Wundts Wissenschaftstheorie der Psychologie. Ein Rekonstruktionsversuch (Wilhelm Wundt's Scientific Theory of Psychology: An attempt at Reconstruction).
- (2013). Zur Kategorienlehre der Psychologie. Komplementaritätsprinzip. Perspektiven und Perspektiven-Wechsel (Systems of Categories in Psychology. Complementarity Principle, Perspectives and Perspective-taking).
- (2015). Theoretische Psychologie – Eine Systematik der Kontroversen (Theoretical Psychology – Systematics of Controversies).
- (2015). Wilhelm Wundts Neuropsychologie (Wilhelm Wundt's Neuropsychology).
- (2016). Leibniz' Einfluss auf Wundts Psychologie, Philosophie und Ethik (Leibniz's Influence on Wundt's Psychology, Philosophy and Ethics).
- (2016). Wilhelm Wundts Kulturpsychologie (Völkerpsychologie): Eine psychologische Entwicklungstheorie des Geistes (Wilhelm Wundt's Cultural Psychology: A Psychological Developmental Theory of the Mind).
- (2016). Wilhelm Wundts Nachlass. Eine Übersicht (Wilhelm Wundt's Estate. An Overview).
- (2017). Wilhelm Maximilian Wundt. German Wikipedia; Wilhelm Maximilian Wundt. English Wikipedia.
- (2017). The influence of Gottfried Wilhelm Leibniz on the Psychology, Philosophy, and Ethics of Wilhelm Wundt.
- (2018). Memorandum zu einer Wilhelm Wundt-Stiftung Grossbothen. Dokumentation, Edition, Rezeptionsforschung und Rekonstruktion (Memorandum: Wilhelm Wundt Foundation. Documentation, Edition, Reception Research, and Reconstruction).
- (2018). Wilhelm Wundt (1832 – 1920). Gesamtwerk: Einführung, Zitate, Rezeption, Kommentare, Rekonstruktionsversuche. (Work: Introduction, Quotations, Reception, Commentaries, Attempts at Reconstruction. (cf. German edition for more details.)

2 Wilhelm Wundt: A Short Biography

1. 1 Curriculum Vitae

Wilhelm Maximilian Wundt was born on August 16, 1832 in Neckarau, Baden, and died at the age of 88 on August 31, 1920 in Grossbothen near Leipzig. His father, Maximilian Wundt (1787–1846), was a Lutheran minister in Heidelberg, Baden; the paternal grandfather Friedrich Peter Wundt (1745–1805), theologian and professor of geography. Wundt's mother Maria Friederike Wundt (1797–1868), daughter of Heinrich August Mau, professor of theology and Luise Mau, née von Rumohr. In 1867, Wilhelm Wundt met Sophie Mau (1844–1912), whose father Heinrich August Mau was a theology professor in Kiel. The couple married in 1872 and had three children: Eleonore (1876–1957), Max (1879–1963), and Louise (1880–1884), called Lilli, who died at a young age. (Drüll, 2019; Lamberti, 1995).

Eleonore Wundt helped her father, wrote letters and other texts, and later, due to his increasing vision and reading impairment, wrote extensive excerpts, in particular for *Völkerpsychologie* (Cultural Psychology). The dedication in volume 5 reads: Dedicated to my faithful companion in the jungle of myths and fairytales (1914, p. V). Max Wundt studied philosophy and was a professor at the universities of Jena and Marburg. After the end of the Second World War, he lived with his family in Tübingen.

Wundt taught until 1917, and from around this time lived in his house in Grossbothen near Grimma/Leipzig, which was initially rented for summer vacation and supplemented the house owned in Heidelberg. Wundt lived there in the summer of 1920, supported by his daughter Eleonore. On July 24, 1920, he dictated the preface to *Erlebtes und Erkanntes* (Experience and Realization). He intended to return to Leipzig in the autumn but died on August 31st of that year. His tomb, as well as that of his wife Sophie and his daughter Eleonore, is located at the Southern Cemetery in Leipzig.

Lamberti (1995) has portrayed Wundt's biography and family history, including 80 illustrations, to such an exquisite degree that it is necessary to refer primarily to his book. Also, the biography written by Meischner and Eschler (1979) and Ungerers (2016) *Biographie Wilhelm Wundts* are informative and richly illustrated. A biographical sketch is included in the Wikipedia article about *Wilhelm Wundt*. The *Heidelberger Gelehrtenlexikon* (Heidelberg Scholar Lexicon) 1803–1932 (Drüll, 2019) and the *Professorenkatalog der Universität Leipzig* (Professors' Catalogue of the University of Leipzig) also contain some additional data. In addition to Wundt's estate, the Leipzig University Archive's collection (<https://www.archiv.uni-leipzig.de/>) includes a photo of Wundt's room in the former institute at Tieckstrasse as well as other documents. The collection is entitled *Der Philosoph und Hauptbegründer der modernen wissenschaftlichen Psychologie Wilhelm Wundt* (Wilhelm Wundt: The Philosopher and Principal Founder of Modern Scientific Psychology).

In addition to this, many encyclopedias include more or less detailed and more or less adequate short biographies, whose reliability and validity needs to be checked on a case-by-case basis. Important facets of his biography were studied and commented on by historians of psychology, especially in the anthologies published by Bringmann and Tweney (1980), Bringmann and Scheerer (1980), and Rieber and Robinson (1980, 2001). There are additional studies by other authors, which cover Wundt's family and his ancestors, youth, political activities in Heidelberg, work as an assistant to Helmholtz, the foundation and further development of the laboratory for *Experimental Psychology* in Leipzig, and his relations with the best-known of his assistants and colleagues. The recent publication by Ungerer (2016), which compiles contributions written together with Bringmann since 1980 and other articles, is especially noteworthy, particularly since it contains more details from the Heidelberg years.

In contrast to this, the volume *Wilhelm Wundts anderes Erbe. Ein Missverständnis löst sich auf* (Wilhelm Wundt's Other Legacy: Dissolving a Misunderstanding) published by Jüttemann (2006a) and the monograph by Araujo (2016), *Wundt and the Philosophical Foundations of Psychology. A Reappraisal*, deal with important facets of Wundt's entire body of work.

Life and Work Biography

This book does not intend to provide a detailed biography of Wundt. The following biographical outline intends only to provide an overview of the significant phases of Wundt's life and the professional context of his work. For orientation purposes, selected biographical data has been summarized in a table. An overview of the most important publications is included the last year of his life, Wundt published his autobiography entitled *Erlebtes und Erkanntes* (1920a). The table of contents is laid out in an unusually detailed way, so that it becomes clear through his retrospection what was essential to him in life. Topics on childhood and youth cover about 52 pages, studies and doctorate 62 pages, habilitation and further research in

Heidelberg 127 pages, his year in Zurich 18 pages, philosophy and other topics 23 pages, and his time in Leipzig 117 pages. The table of contents of *Erlebtes und Erkanntes* is not provided here since it can be easily accessed on the internet (<http://gu-tenberg.spiegel.de/buch/erlebtes-und-erkanntes-193/1>).

A portrayal of both Wundt's personality and his complete work does not exist, although the manifold relations of his life and scientific sphere pose a challenge to a more thorough biographical study, which would include the general orientation of his studies, time as an assistant, first publications and teaching activities in Heidelberg, appointment and founding of the laboratory in Leipzig, research orientation and teaching, personal motivation and attitudes toward matters related to worldview, politics, and religion, and his positions on ethics and metaphysics.

Biographies have been written by:

Edmund König (1901; 3rd edition 1909, 232 pages)

Rudolf Eisler (1902, 209 pages)

Stanley Hall (English 1912; German edition 1914, 178 pages)

Alfred Heussner (1920, 142 pages in octavo format)

Willi Nef (1923, 357 pages)

Peter Petersen (1925, 303 pages)

The first biographers, König and Eisler, were not familiar with Wundt's later works with substantially extended editions of *Grundzüge der physiologischen Psychologie* (Principles of Physiological Psychology), *Logik* (Logic) and *System der Philosophie* (System of Philosophy) and were barely familiar with the beginnings of the *Völkerpsychologie*. Nevertheless, Eisler has the distinction of having meticulously presented Wundt's philosophical thought. Eisler was later well-known thanks to his *Philosophisches Handwörterbuch* (Concise Dictionary of Philosophy, 1904/1922); he also published an instructive article on apperception. In 1928, Eleonore Wundt wrote a few biographical pages about her father, which also include an insightful presentation of important theoretical connections in his work, his cultural psychology and theory of principles, and thus surpasses many of the later attempts of other authors. On the other hand, the philosopher Max Wundt mentions his father only briefly in his books (cf. Chapter 3. 9). In *Überwegs Grundriss der Geschichte der Philosophie* (Überweg's Outline of the History of Philosophy), a classic in German philosophy, there is a well-founded – and in some respects critical – article by Oesterreich (1923/1951) on Wundt's work.

Half a century later, two biographies with selected topics appeared, both of which were written from a more or less Marxist-Leninist perspective, and in this sense stimulate a critical debate. These were written by Wolfram Meischner and Erhard Eschler (1979), and Alfred Arnold (1980). There was an international symposium held in Leipzig in 1979, the year before the *International Congress of Psychology*. The symposium's contributions were published under the title *Wilhelm Wundt. Progressives Erbe, Wissenschaftsentwicklung und Gegenwart. Protokoll des internationalen Symposiums, Leipzig 1. und 2. November 1979*. (Wilhelm Wundt. Progressive Heritage, Development of Science and the Present. Proceedings of the International Symposium, Leipzig, November 1st and 2nd, 1979), (Meischner und Metge, 1980) and a considerable number of publications from the Leipzig Institute appeared thereafter (cf. German edition for more details).

In addition, there is no shortage of essays and book chapters from historians of psychology, in which individual biographical aspects or larger sections of Wundt's work have been studied in detail, such as during his time in Heidelberg and the years in Leipzig when the institute was founded. Biographical details also inspired comments and psychological interpretations. For instance, Wundt's memories of his serious illness in 1857, his political commitment in Heidelberg, and his personal and scientific relations with Helmholtz. Such attempts at psychological interpretation remain highly problematic if they are undertaken without considering the important context of Wundt's work, and if they cannot be supported by additional information. More recently, access to a large part of his existing correspondence has become available. However, private correspondence in Wundt's estate, which is still owned by the family, currently remains unavailable.

The reasons why there is no biography that deals with both, Wundt's personality and his *whole work*, can only be guessed. On the one hand, Wundt's autobiography and the aforementioned *biographical* attempts have existed since König (1901) and Eisler (1902). On the other hand, the interdisciplinarity, difficulty, and scope of his work might have discouraged such a comprehensive undertaking.

Studies and Academic Career

Wundt studied medicine from 1851 to 1856 at the universities of Heidelberg and Tübingen. Among his teachers were the anatomist and physiologist Friedrich Arnold (a maternal uncle), the chemist Robert Bunsen and the physicist Philipp von Jolly. After state examinations and his doctoral dissertation entitled *Untersuchungen über das Verhalten der Nerven in entzündeten und degenerierten Organen* (Research on the Behavior of Nerves in Inflamed and Degenerated Organs), which was awarded *summa cum laude*, Wundt became an assistant in Heidelberg to the pathologist and physician Karl Ewald Hasse, and then moved to Berlin for a research semester with Johannes Müller and Emil du Bois-Reymond.

After his habilitation in 1857, which was necessary to become a lecturer, he was appointed lecturer (unpaid) at Heidelberg University and held lectures on general physiology and medical physics. While recovering from a life-threatening acute illness, he applied for the position of assistant with the physiologist and physicist Hermann von Helmholtz. During his period as an assistant from 1858 to 1863, he trained students of medicine in experimental physiology, lectured on physiology and other subjects, and began his own research on physiology and sensory psychology. At this time, he wrote his first contributions on experimental psychology entitled *Beiträge zur Theorie der Sinneswahrnehmung* (Contributions on the Theory of Sensory Perception). After Helmholtz accepted a professorship in physics in Berlin in 1870, Wilhelm Kühne became his successor in the following year. Wundt, who was appointed associate professor of anthropology and medical psychology in the Faculty of Medicine in 1864, received a salaried associate professorship in 1871.

Only one year after his appointment as a chaired professor of inductive philosophy at the University of Zurich in 1874, Wundt accepted an appointment as professor of one of two chairs for philosophy at the University of Leipzig. He appears to have taken some equipment from the small private laboratory in his home, where he carried out physiological experiments starting in 1855 with the assistance of his mother, who also provided partial financing. In Leipzig, he initially contained only his equipment in a separate room and in 1879 he established a small laboratory for his own experimentation and for demonstrations to students, thus emerged the *Institut für experimentelle Psychologie zu Leipzig* (Wundt, 1910b).

From these beginnings, the world's first institute of psychology with a continuous research program was developed. Between 1889 to 1890, Wundt served as rector of the University of Leipzig.

2.2 Research and Teaching

The Founding of the Laboratory

The small laboratory facility was officially recognized by the university in 1883. It was equipped with facilities and provided with an annual budget as the *Institut für experimentelle Psychologie* (Institute for Experimental Psychology) in 1884. In 1913, Wundt founded a *Völkerpsychologische Abteilung* (Department of Cultural Psychology) at the institute. In 1917, at the age of 85, he gave up his teaching activities (Lamberti, 1995; Meischner and Eschler, 1979; Sprung 1979; Sprung and Sprung, 1980; Ungerer, 2016). Wundt (1910b) himself portrayed the arduous journey of obtaining a room for research and teaching in experimental psychology to the official recognition as an institute by the university and the expansion of the institute with a department of cultural psychology. Other authors have also described the foundation phase in Leipzig in the context of the then developing discipline of psychology (Thomae, 1977; Meischner and Eschler, 1979; Leary, 1979, 1980; Bringmann, Bringmann and Balance, 1980; Bringmann, Bringmann and Ungerer, 1980; Bringmann and Ungerer, 1980; Sprung and Sprung, 1980, 1981; Métraux, 1980; Farr, 1983; Lamberti, 1995; Haupt, 2001; Friedrich, 2009; Wolfradt, 2011; Ungerer, 2016, among others). The building in which the Leipzig Institute of Psychology is presently located – after a previous relocation – contains a "Wundt room" with Wundt's desk, some equipment from that time, as well as some other memorabilia or "Wundtiana" (cf. Lamberti, 1995).

Wundt mainly used devices from the instrument maker E. Zimmermann of Leipzig in his laboratory. Wontorra (2009) selected devices from E. Zimmermann's extensive catalogue that would have been sufficient for an experimental psychology laboratory of that era, i.e. from the time Wundt's laboratory was founded until about three or four decades later and assembled the equipment for an exhibition. The exhibition included an apparatus used for tachistoscopic presentation of stimuli and precise timing, a control system for experimentation, various recording systems, and early electromechanical devices (cf. <http://psychologie.biphaps.uni-leipzig.de/wundt/devices/devices.htm>).

Wundt was also the founder of two journals that promoted the work carried out at the institute in Leipzig, namely *Philosophische Studien* (Philosophical Studies, 1883-1903) and *Psychologische Studien* (Psychological Studies, 1905-1917).

After the death of his wife Sophie, Wundt lived at his house in Grossbothen near Leipzig. Since 2014, an initiative has been underway to preserve this house, which has fallen into decay, and to list it as a historic monument and make it into a place for new, more in-depth research on Wundt (cf. *Initiative Wundt-Haus Grossbothen*, Jüttemann, 2014) and *Memorandum zu einer Wilhelm Wundt-Stiftung Grossbothen* (Memorandum on a Foundation for Wilhelm Wundt, Fahrenberg, 2018b).

Teaching Activity

Beginning in 1875, Wundt held lectures and seminars in Leipzig on a wide range of subjects: logic and methodology, psychology of language, anthropology (natural history and prehistory of man), psychology, general findings on brain and nerve physiology in connection with psychology, history of recent cosmology, historical and modern philosophy, and courses in experimental psychology. The *Historische Vorlesungsverzeichnisse der Universität Leipzig* (Historical Registers of Lectures

at the University of Leipzig, http://histvv.uni-leipzig.de/dozenten/wundt_w.html) show that the first “Psychophysische Übungen” (Tutorials in Psychophysics) were held in the summer of 1881 and the first “Seminar für experimentelle Psychologie” (seminar on experimental psychology for advanced students) in the winter of 1883. The last two courses in the winter of 1913, no. 171 and 172, dealt with the *Geschichte der neueren Philosophie mit einer einleitenden Übersicht über die Geschichte der älteren Philosophie* (history of recent philosophy with an introductory overview of the history of early philosophy) and, in the summer of 1914, with *Psychologie*. Among other documents, the *University Archive in Leipzig* also contains a record of the seminar on experimental psychology, which took place in the summer of 1891, as well as statistics of participants in Heidelberg and Leipzig from 1871 to 1917.

There is an undated transcript from the lecture on *Völkerpsychologie* by Eleanor Wundt. It comprises handwritten accounts of the introduction and the section on language in nine parts, and similar accounts of the other topics. The lecture transcript on psychology is dated to the summer of 1903 (University Archive Leipzig). Previously, only lecture notes by Albert Thumb, a student from Freiburg, were accessible (Jahnke, 1998; Bringmann, Bringmann and Ungerer, 1980).

Academic-Intellectual Environment

In his memoirs, Wundt often writes about the colleagues important to him, friendships between the senior lecturers in Heidelberg, social relations and the personal style of professors, and the academic life in the faculties of the universities of Heidelberg, Zurich, and Leipzig. In addition to Helmholtz, Wundt also associated with the law professor Oskar von Bülow (later also in Leipzig) and the theologian and philosopher Carl Heinrich Cornill in Heidelberg. Ungerer (2016) pointed out that during his school years in Heidelberg, his teacher, the later linguist Bernhard Jülg, drew attention to comparative linguistic research and that Wundt originally wanted to study philology.

The academic environment in Leipzig was even more varied and presented the opportunity to establish many interdisciplinary contacts. Wundt cultivated a professional exchange with some colleagues, such as the philosopher and physician Rudolph Hermann Lotze (1817–1881), and the anatomist and physiologist Ernst Heinrich Weber (1795–1878), and others, who he counted as friends, such as Gustav Theodor Fechner (1801–1887). Wundt later received Fechner’s bequest. Fechner followed Wundt’s research at the institute with great interest and also offered some critical advice (Meischner-Metge, 2003), commenting on Wundt’s plan to establish an institute in Leipzig as follows: “You’ll be finished with all of psychology in a few years.” (Klemm, 1922, p. 95).

Other names also deserve to be mentioned including the physiologists Carl Ludwig, Johann Nepomuk Czermak, and Ewald Hering, the Indo-European philologist and linguist Karl Brugmann, the law historian Rudolph Sohm, and the botanist Wilhelm Pfeffer. The historian Karl Lamprecht, the geographer Friedrich Ratzel, and the chemist Wilhelm Ostwald were part of Wundt’s discussion circle at the Café in the Leipzig Theater.

Controversies about fundamental questions of psychology arose in Leipzig with the mathematician and philosopher Moritz Wilhelm Drobisch (1864), a follower of Herbart) and the philosopher Eduard Zeller (1882a, 1882b), who denied the measurability of mental processes. A lengthy controversy arose with the astrophysicist Friedrich Zöllner and the law professor Hermann Ulrici in Halle about spiritualism (Wundt, 1879; Bringmann, Bringmann and Bauer, 1990).

Assistants and Staff

The first assistant was the American James McKeen Cattell (not to be confused with Raymond B. Cattell known for personality research and multivariate methodology). The status and income of a volunteer assistant at that time is not at all comparable with today’s assistants; in this respect, the distinction between assistant, PhD-student, and coworker is questionable. Between 1885 and 1909, a total of 16 assistants were mentioned (Meischner-Metge, 2003). Meischner-Metge distinguishes between assistants, doctoral students, co-authors of the *Festschrift* on the occasion of Wundt’s 70th birthday, and mere auditors and participants in the laboratory. In addition to the first assistant James McKeen Cattell, Meischner-Metge mentions Ludwig Lange, Oswald Külpe, August Kirschmann, Ernst Meumann, Friedrich Kiesow, Paul Mentz, Erich Mosch, Robert Müller, Wolfgang Möbius, Wilhelm Wirth, Ernest Dürr, Felix Krueger, Otto Klemm, Paul Salow, and Friedrich Sander. Of these, Klemm, Külpe, and Lange, did not submit a dissertation in experimental psychology. Other noteworthy colleagues and outstanding doctoral students also deserve mention: Alfred Georg Ludvig Lehmann, Gottlob Friedrich Lipps, Karl Marbe, Walther Moede, Hugo Münsterberg, Charles Spearman, Gustav Wilhelm Störing, Edward Bradford Titchener, Lightner Witmer, and the psychiatrist Emil Kraepelin. Many of these collaborators later became well-known pioneers in various fields of psychology (cf. [https://home.uni-leipzig.de/biocog/content/en/Psychology history/](https://home.uni-leipzig.de/biocog/content/en/Psychology%20history/)).

In addition to short biographies of some well-known doctoral students, three complete dissertations are available on the Leipzig Institute’s website: Max Friedrich’s dissertation entitled *Über die Apperzeptionsdauer bei einfachen und zusammengesetzten Vorstellungen* (On the Apperception Duration in Simple and Composite Representations), James McKeen Cattell’s *Psychometrische Untersuchungen* (Psychometric Examinations), and Charles Spearman’s *Die Normaltäuschungen in der Lagewahrnehmung* (Normal Illusions in Perception of Position) (cf. <https://home.uni-leipzig.de/biocog/content/de/psychologiegeschichte/>).

The associates and colleagues who later became professors in Leipzig are well documented in the *Leipziger Professorenkatalog* (Leipzig Register of Professors), including August Kirschmann, Otto Klemm, Felix Krueger, Rudolf Lehmann, Ernst Meumann, and Wilhelm Wirth. There are articles about many of these individuals on the German and/or English Wikipedia pages as well as in encyclopedias and textbooks on the history of psychology. Due to the problematic experiences during his research semester with Emil Du Bois-Reymond in Berlin, Wundt said the following about the role of academic teachers and students: "First, if you ever have a disciple, let him, wherever possible, go his own way; and second, beware of becoming the head of a school." (*Erlebtes und Erkanntes*, 1920a, p. 148). In his memoir, the names of some closely related people, such as Max Klinger, who created the bust portrait, or Wilhelm Ostwald, do not appear. He leaves out many areas of life as well as many people. For instance, Külpe, Meumann, Münsterberg, and several others are not mentioned at all.

Meischner-Metge (2003) attempts to describe Wundt's relationship with his most well-known "disciples": Kraepelin, Külpe, and Meumann. She examines the personnel situation at the Institute, including Wirth's department, and the discussion and decision about Wundt's successor. According to Meischner-Metge, Spranger wanted to get Ziehen to come to Leipzig, but without clearly rejecting Krueger. Eventually, Krueger, Ziehen, and Lipps were on the short list of successors. Krueger was probably the most skillful in dealing with Wundt. Among his colleagues, he probably would have been the one who could have carried on Wundt's work in cultural psychology, and perhaps had even promised to do so, although Wundt had commented critically on Krueger's attempts to that effect (Meischner-Metge, 2003, p. 165; see the German edition for more details).

Doctoral Students and Visitors

Between 1875 and 1919, Wundt wrote the first of the two academic appraisals on 186 doctoral theses. The focal points of the experimental studies (85 dissertations) were Fechner's psychophysics and research on apperception with reaction time measurements and other methods. Apart from many philosophical themes, there were relatively few theses concerning cultural psychology (Gundlach, 1993; cf. *Wilhelm Wundt und die Anfänge der experimentellen Psychologie*, Wilhelm Wundt and the Beginnings of Experimental Psychology) (<http://psychologie.biphaps.uni-leipzig.de/wundt/>). In the list of doctoral students there are about 70 foreigners: 19 from the United States, England, and Canada, and at least 24 students from Russia, Romania and other Eastern European countries, as well as 2 from India. However, there are no students from France, Italy, and Spain. Ben-David and Collins (1966) have pointed out that Wundt trained more than half of the American psychologists of the first and second generation (see also Baldwin, 1980; Hillix and Broyles, 1980; Pintner, 1920; Tinker, 1932).

The following students (or visitors) whose names later became prominent are also mentioned: James Baldwin, Vladimir Mikhailovich Bekhterev, Franz Boas, Émile Durkheim, Stanley Hall, Harald Höffding, Edmund Husserl, Ludwig Lange, Bronislaw Malinowski, Matataro Matsumoto, George Herbert Mead, Albert Michotte, Nicolai Lange, Edward Sapir, William Isaac Thomas, Ferdinand Tönnies, William James (cf. Meischner-Metge, 2003; Sprung, 1979). The philosophers Wilhelm Dilthey, Aloys Riehl, and Eduard Spranger are also noteworthy, as well as visits and correspondence with former colleagues such as Emil Kraepelin, Oswald Külpe, Theodor Lipps, Ernst Meumann, and Hugo Münsterberg.

Politics

Wundt was co-founder of the *Verein deutscher Arbeitervereine* (Association of German Workers' Associations). He was a member of the liberal *Badische Fortschrittspartei* (Progressive Party of Baden), and as representative of Heidelberg, he was a member of the second chamber of the parliament known as *Badische Ständeversammlung* (Baden States Assembly) from 1866 to 1869. Wundt's fields of activity included the legal status of students, school reform, and the commission report on the draft law concerning the legal relationship between students and the universities. Regarding the school system, he advocated for the so-called *Simultanschule* (simultaneous school), i.e. a school for pupils of all religious denominations. Furthermore, he advocated for the reduction of religious lessons and for the training of female teachers for boys' schools. Until 1874, Wundt served as co-founder, and temporarily chairman, of the *Heidelberger Arbeiterbildungsverein* (Heidelberg Association for Workers' Education) and promoted teaching in the German language, arithmetic, bookkeeping, and writing, in order to improve the social situation of the workers. During his entire life, Wundt was committed to progress in educational policy and reform (Finster, 1980; Ungerer, 2016).

Awards

In 1876, Wundt was awarded Dr. phil. h.c. by the University of Leipzig, and in 1887 Dr. jur. h.c. by the University of Göttingen. In addition, he was an honorary member of 12 scientific societies at home and abroad. In 1888, he was appointed *Königlich Sächsischer Geheimer Hofrat* (Royal Saxon Secret Councilor), and in 1912 he was elected to be a member of the order *Pour le Mérite for sciences and arts*. He was a foreign or corresponding member of 13 academies, and became an honorary citizen of Leipzig in 1902, and of Mannheim in 1907 (Lamberti, 1995; Meischner and Eschler, 1979; Ungerer, 2016).

Conversation Circle at the Theater Café

In Leipzig, Wundt maintained close professional and friendly exchange with the geographer Friedrich Ratzel, the historian Karl Lamprecht, and the chemist Wilhelm Ostwald (awarded the Nobel prize in 1909). They met for many years around the turn of the century in the Theater Café. These professors, who included Wundt because of his dedication to cultural psychology, were relative outsiders in their respective disciplines. Their fundamentally monistic position and openness to Darwin's *On the Origin of Species*, then still widely rejected, could have formed a common bond between them. There is not yet a portrayal of this interdisciplinary circle, neither from the perspective of the history of ideas nor in a biographical respect.

Correspondence

With regard to Wundt's correspondence, former assistants and co-workers such as Kraepelin, Külpe, Th. Lipps, Meumann, and Münsterberg should be mentioned first. During his work on *Völkerpsychologie*, Wundt's correspondence seems to have expanded due to the interdisciplinary scope of his research, and included correspondence with outstanding philologists of Indo-European languages, philosophers, theologians, and natural scientists in Germany such as E. Haeckel (biology), C. Meinhof and E. Hahn (ethnology), K. Brugmann (philology), P. Barth, R. Eucken, H. Lindau, Fr. Paulsen, W. Schuppe, A. Sichler, Th. Valentiner (philosophy, educational science), F. Tönnies (sociology), K. Thieme (theology), R. von Jhering and O. Bülow (law).

Wundt's bequest at the *University Archives* at Leipzig contains not only the letters Wundt received in the course of his very extensive correspondence, but often also letters he wrote himself, an effort that was organized by Eleonore Wundt. The majority of the letters are kept relatively short and consist of expressions of gratitude in return for books received and their possible integration into Wundt's own works, brief references to work projects or manuscripts, recommendations, greetings, and congratulations. However, individual letters are of greater interest. A selection of Wundt's correspondence, designated as a *demo version*, was previously made available directly on the Institute's website by Wontorra, Kästner and Schröger (2011), including some interesting letters from Wundt's correspondence with Cattell, Fechner, Helmholtz, Kraepelin, Külpe, Lindau, Meumann, Münsterberg, Ostwald, and Ribot, etc. (<http://www.uni-leipzig.de/~wundtbriefe/>) (last updated July 10, 2011; cf. Wontorra, Kästner and Schröger, 2012). Even before this archive, several authors quoted individual letters (e.g. Araujo, 2016; Bringmann and Ungerer, 1980; Fahrenberg, 2011; Fischl, 1959; Lamberti, 1995; Meischner-Metge, 1990, 1998, 2003; Schlotte, 1955/56), but there is still a lack of edited and annotated correspondence similar to that between Wundt and Kraepelin (Steinberg, 2002).

In 2016, the University Archive in Leipzig completed the digitization of its bequest from Wundt. At present, it amounts to approx. 5,800 items, providing excellent documentary material (Meyer, 2015). This material represents an extraordinary step forward for research on Wundt, especially since it is accessible on the internet and includes correspondence, scripts, excerpts, lecture transcripts, a number of hitherto unknown, unpublished poems of Wundt's, various documents from the Leipzig Institute (also from a later date), and some Wundtiana (Meyer, 2015; Meyer, Schröger, Mädebach, 2016; Fuchs and Meyer, 2017).

Regarding the estate now accessible at the University Archive in Leipzig, Meyer (2015) wrote: "In addition to the work materials and personal documents, the letters represent the second largest group in the bequest. Until now, only individual sections of this correspondence have been edited scientifically, and in part also made available to the public in digitized form. The approximately 4,860 documents were preserved in a special manner: After the death of her father, Eleonore Wundt asked many of his correspondents to send her Wundt's letters. Since a large number of the addressees obliged, there are now about 3,000 letters available and nearly 1,000 letters from Wundt himself, making it possible to follow part of the correspondence in its entirety. In addition, there are about 800 letters from third parties, most of which consist of the correspondence between Wundt's wife Sophie and their children Eleonore and Max. The expressions of condolence addressed to both children on the occasion of the death of their father constitute another major item." (pp. 371-377).

Among Wundt's correspondents, Meyer (2015) points out: Richard Avenarius, the brothers Theodor and Gottlob Friedrich Lipps, the sociologist Ferdinand Tönnies, who also had family ties with Wundt, Eduard Spranger, Ernst Haeckel, Emil Heinrich du Bois-Reymond, Hermann von Helmholtz, Georg Cantor, and Gustav Theodor Fechner, whose letters exchanged with Wundt "sometimes resemble small treatises in terms of scope and content and are certainly to be ranked among the 'jewels' of the inheritance from the perspective of the history of science (p. 376).

The correspondence is available partly in handwritten form, partly as transcripts. Wundt's handwriting can only be deciphered with great difficulty, making the inspection, evaluation, and a possible edition of excerpts and lecture notes from the Leipzig archives a great challenge. However, the results would be significant in terms of his work and the history of psychology.

In the *Deutsches Historisches Museum* (German Historical Museum) in Berlin, a shellac record is preserved in the record collection. It contains Wundt repeating the concluding words in 1918 of his inaugural lecture *Über die Aufgabe der Philosophie in der Gegenwart* (On the Task of Philosophy in the Present, 1874b) held in Zurich on October 31, 1874. The recording length is 2 minutes, archived in MP3 format (cf. Fahrenberg, 2016d).

Wundt taught at the University of Leipzig from 1875 to 1917. Apparently, his academic life was relatively steady, without traveling abroad or visits to the international congresses of psychology, which took place during his time in Paris, Munich, and Leipzig. He did not even attend the congresses of the German *Gesellschaft für experimentelle Psychologie* (Society for Experimental Psychology) founded in 1904. On their holiday trips, the couple often visited the island of Sylt in the North Sea, partly in the company of his friend Emil Kraepelin. In Heidelberg, the family owned a house at No. 48 Plöck Street, which today no longer exists (Ungerer, 2016).

Apart from his nearly universal horizon of scientific interests, his involvement in the Workers' Education Association and in Baden's state politics was probably his first priority, at least during his Heidelberg years. Affected by the outbreak of the First World War and the subsequent catastrophe, he wrote his speeches and autobiographical retrospective in *Erlebtes und Erkanntes* (1920) with a different perspective.

Among his personal interests, his fondness for classical literature is remarkable, and he wrote about his interest in theater, especially in the work of Shakespeare. His bequest contains a number of his unpublished poems, which have been transcribed by Katharina Ungerer-Heuck (2018) under the title *Poetische Versuche (1850–1920)* (Poetic Attempts). However, according to him, politics was his most strongly developed interest: "Should he himself place the subject that was the most powerful in his entire life in the foreground, it is – though not at all times, but at the high points of this life – the political, the participation in the interests of the state and society that have captivated the writer of these lines. It led him – into life. It has repeatedly had an impact on this life and was close by when it approached its end." (Preface to *Erlebtes und Erkanntes*, August 1920, p. IV).

2.3 Wundt's Political and Religious Attitudes

Wundt's Political Attitudes

Several chapters of his autobiography *Erlebtes und Erkanntes*, and his views on the future of culture included in volume 10 of the *Völkerpsychologie* convey a glimpse into Wundt's marked political interests. His involvement in the Heidelberg Workers' Education Association and his activities as a member of the Baden parliament are well known. In his address as Rector of the University of Leipzig (1889/2009), held during the centenary of the French Revolution, Wundt commemorated the great upheavals of the year 1789 and the Declaration of Human Rights as a moral creed and as the preparation for a national constitution (cf. Chapter 3.7). In his speech commemorating the 500th year anniversary of the founding of the University of Leipzig, he described the close relationship between research and teaching, and then emphasized: "The preparation for practical occupations will always be one of the university's main tasks. However, the full ability to carry out practical tasks by independently applying constructive knowledge can only be gained through one's own understanding and own conviction, the latter of which requires an introduction to independent work." (*Reden und Aufsätze*, Speeches and Essays, 1913c, p. 371).

In 1897, a survey was conducted at German universities regarding the right of women to attend university. Among the 122 university professors who responded, apparently six from Leipzig answered affirmatively, including Ostwald, but most vocally Wundt (1897b): "I believe a woman who in certain areas has the same skills as a man, is entitled just like him to train and apply these skills. The oft-heard argument that there are already enough male candidates in all areas, so there is no need for female competition is an argument which appears to me to be merely the expression of a brutal sex egotism, which is no better than class egotism that rests on privilege." (p. 180).

Wundt wrote the second appraisal of Anna Berliner's thesis in 1914, which means that Berta Paulsen (1919/1920) was probably the first doctoral student to conduct experimental work in Wundt's laboratory for which Wundt wrote the first appraisal (Gundlach, 1993).

Ungerer (2016) has compiled interesting sources on the subject of *Wilhelm Wundt als Psychologe und Politiker* (Wilhelm Wundt as a Psychologist and Politician), which deal mainly with Wundt's activities as a politician and journalist in Heidelberg. He portrays Wundt's involvement in the Heidelberg Workers' Education Association and mentions a number of publications dealing with political issues, e.g. in journals, speeches, and other contributions, including the later patriotic speeches about the First World War. Wundt appears in the aforementioned biographies as both a liberal politician and liberal bourgeois intellectual. He supported the training of workers, school reform, separation of church and state, and unrestricted access to all professions (Meischner und Eschler, 1979, p. 83). The following is a sample of Wundt's political statements: "The fact that even today every citizen must belong to one of the denominations recognized by the state ... is unjust, immoral, and unreligious at the same time ... Against this injustice there is only one aid, ... the separation of church and state." (*Ethik*, 1912a, vol. 3, pp. 224-225). Elsewhere, he mentions the evils of unlimited entrepreneurship and outdated economic and inheritance legislation (*Völkerpsychologie*, 1920, vol. 10, p. 335) and stresses the importance of institutions for social security pensions in Germany, compared to Anglo-American capitalism and materialism. In this chapter on *Die Zukunft der Kultur* (The Future of Culture), he referred to Fichte's conception of state socialism, as well as to Feuerbach, Marx, and Lassalle, and he advocates for the socialization of railroad companies, the postal service, and telegraphy. Wundt also considered the

state an educational community and demanded better educational opportunities, including university access, for a wider section of the population. Furthermore, he advocated for an entirely cost-free educational system and criticized the educational privileges of the rich as well as the social stratification of classes in the capitalist world (*Ethik*, 1912a, vol. 3, pp. 310-312, pp. 322-323, pp. 229-261).

Finster (1980) summarized as follows: "His demands with respect to the responsibility of universities and scientists to society, the combination of research and teaching, the practical orientation of education, the philosophical foundation of specialized knowledge for scientists and students, as well as the integration of large sections of the population into the educational system, must be viewed as unequivocally progressive." (p. 385)

Wundt's Later Political Speeches and Writings

At the beginning of the First World War, Wundt signed the *Erklärung der Hochschullehrer des Deutschen Reiches* (Declaration of Professors at the Universities and Technical Colleges of the German Empire), which justified Germany's position in the war. This declaration was joined in 1914 by over 3,000 German professors and lecturers from 53 universities, including Max Planck, Wilhelm Röntgen, Edmund Husserl, Georg Elias Müller, Alois Riehl, Eduard Spranger, Karl Stumpf, and Wundt's colleagues Emil Kraepelin, Oswald Külpe, and Ernst Meumann.

Wundt's patriotic speech *Über den wahrhaften Krieg* (About the Real War) stands out because it was publicly held in front of a large audience in the Alberthalle in Leipzig on September 10th, 1914. Wundt was convinced of the necessity of self-preservation and of the superiority of German culture. Although he carefully weighed the arguments, he turned entirely against England, to which he attributed guilt for the outbreak of the war and referred to as selfish. The term "real war" was coined by Fichte during the "wars of freedom," i.e. defensive wars against Napoleon at the beginning of the 19th century. For Wundt, the goal remains to consider Germany as a nation with the dominant culture: *Die Weltkatastrophe und die deutsche Philosophie* (The World Catastrophe and German Philosophy). This corresponds to similar remarks on German culture and the future undertakings of philosophy in his autobiography (1920a, pp. 366-399). However, the essay *Die deutsche Philosophie und ihr Schicksal* (German Philosophy and Its Fate), published in 1920, was not written by Wilhelm Wundt, but by his son Max.

Undoubtedly, Wundt was convinced of the outstanding qualities of German philosophy, science, and culture, but from today's point of view both texts may appear not only patriotic, but exaggeratedly nationalist and very remote. Of course, the historical-political connection between war, surrender, and the political, civil-war-like turmoil in postwar-Germany, which experienced the November Revolution in 1918 as well as attempts to establish a *Räterepublik*, (Soviet republic system of government) like the communist revolution in the Soviet Union, has to be taken into consideration. In the later correspondence, especially with his son, he was critical about all political parties in view of the fundamental crisis that was brought about by the war. However, Wundt hoped that after the war and its immense sacrifices, the further expansion of social reforms that had begun in peacetime would be possible (*Die Nationen und ihre Philosophie*. Nations and their Philosophies, 1915a, p. 153). The patriotic-national speeches and essays written by Wundt during the First World War have been commented on in different ways (cf. Meischner and Eschler, 1979; Michalski, 2010; Ungerer, 2016).

Brock (1992) asked the question of whether or not Wundt's cultural psychology should be seen in connection with Nazi ideology (*Was Wundt a 'Nazi'? Völkerpsychologie, racism and anti-semitism*). Brock vigorously rejected this allegation, which was prevalent for a period of time in the United States and traced it back to misunderstandings on the part of G. W. Allport. Perhaps there was confusion at times with Wundt's son Max, professor of philosophy in Jena, who was a member of an extremely conservative association of university teachers and also of the national-conservative organization *Alldeutscher Verband* (All German Federation), but not a member of the NSDAP.

The first to examine the political attitudes of Wilhelm Wundt and also of Max Wundt more thoroughly was Michalski (2010, pp. 164-182, 377-424). With regard to Wundt, he relies mainly on speeches that differ in many ways, yet there is still no conclusive interpretation of Wundt's change in attitude in the context of war and revolution, the rectorate speech on human rights and human duties as well as in the context of the idea of humanity contained in his ethics. Is there not a persistent contradiction between Wundt's liberal or even left-liberal political attitudes and his German nationalist lectures and essays? Here, a more comprehensive analysis is possible that includes both Wundt's correspondence and his analysis of political forms of state and society, and his reflections about the future of culture contained in *Völkerpsychologie*.

Religion and World View

In his autobiography, Wundt recalls his severe disease in 1857 at the age of 25 and reflects on his life, the possibilities of knowledge, and the task of philosophy to establish a consistent world view. He writes: "The clear awareness of this unity occurred at the moment in which I departed for a long time from all the tasks, yet still far away, to which I submitted myself. However, it has begun to dawn on me that from that moment on and for the rest of the future I found the starting point, according to which the external experiences and the knowledge connected to them form an internal coherence. From this point

on, I began to view my experiences and insights as belonging to a more and more consistent world view, which finds its necessary substrate in the sensual world, and the living form of this substrate, which is given to the human consciousness, in the mental world. From this moment on, it has become increasingly clear to me that there is no scientific knowledge that is not at the same time a kind of philosophical knowledge to some extent, and, likewise, no philosophical knowledge that does not coincide with the totality of individual scientific findings . . . and, finally, I cannot disregard the conviction that the task of philosophy consists essentially in illuminating the connection between the empirical-sensual reality and its mental reproduction in human consciousness.” (1920a, pp. 124-125).

This memory of Wundt’s has inspired psychological-biographical interpretations by various historians. It is clear, however, that these are hardly theological thoughts, but an approach to a unified world view that sums up different ways of gaining knowledge from a monist perspective. This guiding principle runs through Wundt’s entire body of work (cf. Chapters 3.8 and 3.9).

Of course, one might ask at this point about the conception of man in Wundt’s psychology. Perhaps the fact that neither his work nor autobiography contain concise formulas or confessional statements characterizes Wundt well. When he comments on philosophical issues, his statements can often be read as rejecting certain metaphysical traditions and speculation. Elsewhere, his discussion of philosophical-ideological and religious themes is thoughtful, deliberative, and argumentative. He admits to having preferences and expectations, but often does not formulate them as final judgments. Regarding Wundt’s world view, some remarks in *Erlebtes und Erkanntes* (1920b) are worth mentioning: “There must come a time when no one can dispute someone’s belief in the transcendent idea of God and the spiritual world if he cannot manage without it, but also everyone has the right to overtly profess an idea of God as being immanent to every human soul.” (1920b, p. 121).

Wundt was the son of a Protestant (Lutheran) pastor and was educated according to Christian values. He married the daughter of a theology professor; however, considering some of his statements and remarks, he remained outside the Christian faith in terms of God and revelation. This deliberative and distanced attitude is most evident in his *Ethik*, as well as in his theory of actuality, i.e. the process theory of mental relations, which does not assume a transcendent soul principle. Wundt’s *Völkerpsychologie* and his *Ethik* certainly include some comments on Christianity. He emphasizes the great importance of religion for cultural development as well as for ethics, but he mainly referred to the *idea of humanity* (cf. Chapter 3.7).

The references in his autobiography (1920b, pp. 118-124) to the prevalent religious perspective and his explanations of the idea of God in transcendent and immanent form are peculiarly vague. Wundt’s degree of sensitivity in dealing with this subject can be seen in the fact that he was attributed both deeply religious, theistic views, as well as even atheistic views (Lamberti, 1995; Meischner and Eschler, 1979). In Wundt’s autobiography, the terms revelation, personal God, Creator, Jesus, and Christ do not appear. The concepts of theism and atheism are mentioned – with one exception – in their historical context only.” His reflections about the experience of God remain ambiguous, as does the inscription on his tombstone: “God is spirit, and those who worship him have to worship him in the spirit and in the truth.” In his last will, Wundt declared that his wife’s epitaph on their common tombstone should remain unchanged in terms of its content: “God is love, and he who is inside love, will remain in God and God in him.”

Wundt’s renunciation of the traditional concept of the soul was widely contradicted in reviews and textbooks. For instance, his approach lacks a justification in an ultimate principle or in the Absolute (“Geist”) from the position of philosophical idealism. From a Christian point of view, the so-called “psychology without soul” was rejected. Reviewers like Besser, Gutberlet, Klimke, Rabus, and Sommer missed the concept of God. They attacked the denial of an immortal soul and considered Wundt’s psychology to be fundamentally wrong, misguided, and even dangerous. For these reasons, some of the reviewers also rejected Wundt’s *Ethik*. Since Wundt would not refer to God, creation, or revelation, his *Ethik* lacks a justification. Analogously, some commenters criticize Wundt’s “empiricist” and “evolutionary” ethics – albeit not theologically, but in the sense of idealist philosophy—for the absence of an absolute, moral subject as the ultimate authority. Klimke, a Jesuit, suggested in a review that Wundt’s work would not be appropriate for Roman Catholics (Klimke, 1908; cf. Fahrenberg, 2011, 2015a).

In view of the massive ideological polemic to which Wundt was exposed, it may be surprising that this topic was hardly addressed in the research on how Wundt’s conception of psychology was received. Most of the prominent German psychologists of the founding period have a biographical connection to religion and church because their fathers served as clergy members, or they studied theology themselves (or at least this was intended by their parents). This applies to Fechner, Wundt, Dilthey, Brentano, G. E. Müller, Stumpf, and Bühler. However, the postulate of an individual soul as an ontological substance or in a theological sense, or the negation of such an absolute premise, constitute together one of the fundamental controversies in philosophical psychology and in theoretical psychology (cf. Fahrenberg, 2015a, pp. 732-738).

2.4 Emil Kraepelin’s View of Wundt

Emil Kraepelin, the pioneer of modern psychiatry, was a student, colleague and friend of Wundt's. Kraepelin (1920) described the new Leipzig Institute and his personal impression of Wundt in an obituary: "We felt like pioneers in a new territory; creators of a science with unlimited prospects. Wundt spent several afternoons a week in his modest study next door. He would come over, advise us, and often take part in the experiments. He was also accessible to us at any time. Since he used to regularly walk around the inner city, it was not difficult, with a bit of luck, to cross his path and accompany him to his apartment in Goethestrasse, where he, high up in an imposing house belonging to the university, had a spacious, comfortable home. . . . Wundt loved to welcome his students from time to time in his home and treated them like guests. We had the opportunity to meet his sophisticated, gracious wife on festive occasions during which all possible scientific questions were discussed in a very casual manner." Kraepelin paid tribute to Wundt's great work, *Völkerpsychologie*, with the following remark: "What he achieved with his expansive view and unique ability – often compared with Leibniz – to intellectually process immense areas of knowledge, together with his untiring creativity, deserves the highest admiration. Only the most uncompromising summoning of strength to achieve this one great goal could enable him to finish his life's work. The harmonious way he conducted his life enabled him to achieve this goal. Although Wundt enjoyed spending time with like-minded friends, closely followed world events, and read literature after his daily work, the main part of the day, apart from his lectures, always belonged to creative work. He would joke that giving lectures and writing books keeps one healthy.

Wundt did not view the transition from physiology to philosophy as misguided. He often said that philosophy contains what is common to all sciences. Therefore, one could advance from any science to philosophy, but one cannot be a philosopher without having thoroughly learned an individual science beforehand. That is what he told the many young students who came to study philosophy with him. From the outset, Wundt's disposition was directed towards the general. He aspired in all areas to discover principles and grand points of view, and to build bridges that connect different areas of knowledge. But in order to do so, he always started with the solid foundation of facts. Based on his scientific training, which was strictly rooted in the natural sciences, it was evident to him that it was first necessary to establish what exists using all imaginable tools, and that measurement and experiment, which allow conditions to be varied until the real facts are completely clear, are the most reliable thing in the struggle to discover facts. The strength of Wundt's intellectual personality lies within this constant connection to the comprehensive overview of broad areas of knowledge and the great meticulousness of his independent research."

Kraepelin describes "Wundt's calm equanimity and warm sympathy for the fate of his friends and students, as well as his bold self-assertion against antagonists and scientific opponents, amiable humor, uncomplicated and natural character, and friendly objectivity towards the youngest of his students. Wundt's outer appearance might have been disappointing on the first encounter; however, the compelling, simple dignity of his nature was impressive and testified to inner greatness. This was fully revealed only through closer acquaintance or in the lecture hall, where, after a few words, the breadth of his views and effortless mastery of the subject imparted insight into the immense richness of his intellect, even to the most uninformed listener. Wundt also maintained a proud modesty in the face of his many honors. And, finally: Not only Wundt's achievements have become valuable to science, but also the way in which these achievements were realized. He was not only an incomparable teacher, but also an educator whose compelling example had extraordinary effects. Many generations of young people eager to educate themselves have passed through this school. Even among us there are more than a few who are proud to call themselves his disciple." (Kraepelin, 1920, pp. 351-362).

Compared to the honors and obituaries from the *psychologists* in Leipzig (cf. Chapter 4), Kraepelin's memories make a strong and convincing impression. The psychiatrist, also a famous and by no means forgotten pioneer of his own discipline, apparently has no difficulty considering himself a disciple of Wundt's and associating himself with his scientific orientation. His obituary is well written and far more concise in its psychological portrayal of Wundt's personality and way of life than the cumbersome ponderings of Krueger, Meumann, Sander, and the other psychologists.

The correspondence between Wilhelm Wundt and Emil Kraepelin provides insight into their decades-long friendship (Steinberg, 2002). According to De Kock (2018) and Hoff (2015); the following aspects of Kraepelin's work provide evidence of Wundt's influence: Kraepelin's adherence to Wundt's psychophysical parallelism, and his adopting of the assumption of an independent psychic causality; the significance of volitional processes and attention; Kraepelin's analysis of speech disorders in dementia praecox (schizophrenia) inspired by Wundt's psychological system and in anticipation of contemporary approaches to schizophrenia and psychotic disorders related to attentional deficits and disturbance in executive functioning; Kraepelin's emphasis on the autonomy of psychological explanation in contrast to a purely biological approach and, correlatively, his interest in the relation between psychopathology and "disturbances of apprehension, ideation, judgement, delusions, mood, and pathological changes in the activity of the will" (Kraepelin, 1905, p. 2).

Kraepelin is generally considered one of the most eminent founding fathers of modern psychiatry and his work remains influential in contemporary psychiatry. Wundt, likewise, is considered the founding father of modern psychology. Thus, it is surprising that only recently, as De Kock points out, there is stronger interest in analyzing this intellectual tradition more closely: "the exact nature and extent of Kraepelin's indebtedness to Wundt in this respect needs to be further investigated in the future." (De Kock, 2018, pp. 286-287).

2.5 Wundt's Bequest

After Wundt's death, his daughter Eleanor assumed responsibility for his bequest. In consultation with her brother, she sold about 60 percent of Wundt's large library to the library of Tohoku Imperial University in Sendai, Japan (cf. Takasuma, 2001). This was probably due to the family's lack of money following the period of hyper-inflation in Germany in 1923. Later, the Leipzig Institute received the remainder, except for a smaller portion that was given to her brother Max in Tübingen. A recent overview refers to the following: (1) Wundt's publications, bibliographies, digitized material; (2) Wundt's library in Grossbothen and its whereabouts; (3) the Wundt Archive in Grossbothen (1920-1947); (4) the Wundt Archive housed at the Leipzig *Institute of Psychology* since 1948 and at the *University Archive*; (5) Wundt's correspondence; (6) lecture manuscripts, excerpts and drafts; (7) birthday congratulations, obituaries, and commemorative speeches; (8) biographical material; (9) Wundtiana; (10) the establishing of four organizations dedicated to Wundt and his work, and related objectives; (11) the house in Grossbothen, including his relations with Wilhelm Ostwald (cf. for more details Fahrenberg, 2016c).

This biographical outline was not intended to provide a detailed description of Wundt's biography or to emulate Lamberti's (1995) thorough biographical account. It is important, however, to convey the context of Wundt's biography and his scientific work before it is discussed in subsequent chapters.

2.6

Leitmotiv

Wilhelm Wundt – neurophysiologist, psychologist, and philosopher – is known for his interdisciplinarity, outstanding research competence, and epistemological-philosophical reflection. His metatheoretical thinking (perspectivism) surpasses later psychologists. The intellectual potential and heuristics of Wundt's cultural psychology are by no means exhausted; however, nowadays they require interdisciplinary cooperation. Compared to *philosophy of the mind* or speculative theories of culture, the term *psychologische Entwicklungstheorie des Geistes* (*psychological developmental theory of the mind*) underlines the *leitmotiv*, guiding principle, and empirical notion of psychological research.

In his program of research and teaching, which extended over more than 50 years, Wundt created a theoretical horizon like hardly any psychologist after him: general psychology, cultural psychology, epistemology, methodology, as well as theoretical psychology as a whole. Which individual questions and theoretical elements of Wundt's work might still serve as ideas or at least heuristics can only be discussed within the respective thematic context? However, Wundt's comprehensive approach is noteworthy for the scope of its objectives at the beginning of psychology as a new discipline, its principles, perspectivity, and exemplary interdisciplinarity, all united in one person, an achievement that no longer seems attainable today.

Wundt postulated a categorical difference between *mental science* and *natural science* and described his epistemological position as a "critical realism" against the background of ongoing controversies between the views maintained by philosophical idealism, sensualism, materialism, and positivism. His view has important advantages in comparison with the current widespread critical rationalism, naturalism, and neuroreductionism, which are clearly modelled on the natural sciences, especially physics, and thus involve basic category mistakes. In comparison with neurophysiology, Wundt goes further back to the underlying philosophical presuppositions and develops specific categories and epistemological principles of psychology, which he also relates to cultural psychology and the humanities. In addition, Wundt profited from his own research competence as well as methodological knowledge, which ranged from neurophysiology to experimental psychology and also included methods of interpretation. His psychology is also linked to psychological anthropology and ethics.

The richness of Wundt's publications and the variety of topics he covered demand numerous cross references and didactic aids. Several recurrent quotations serve to reinforce particularly important ideas and provide transitions between chapters. Chapter 3.1 contains a brief initial overview of primary concepts and topics, which are further elaborated in subsequent chapters and presented in Chapter 5 in a more formal and cohesive manner.

2.7 Annex – Biographical Data

1832	Born August 16 in Neckarau near Mannheim; father Maximilian Wundt (1787–1846), Protestant reverend; mother Marie Friederike, née Arnold (1797–1868), fourth child; only Wilhelm and his older brother Ludwig survived childhood; father liberal theologian characterized by his son as generous and friendly; Grandfather professor of geography and reverend; mother diligent and full of willpower; family descendants of Protestant refugees from France and Austria; reverends on the paternal side; scientists, doctors, and civil servants on the maternal side.
1836–1848	Elementary school in Heidelberg, Middle Baden; father took over larger parish in Heidelberg in 1836 and died in 1840.
1840–1844	Private lessons with the vicar Friedrich Müller who was employed in the parish at the time; stayed in Müller's parish in Münzesheim in 1844 until the start of the secondary school in autumn 1844 in Bruchsal (school crisis).
1845–1852	Witness of the revolutionary events in Heidelberg and neighboring areas around the year 1848; completion of the secondary school in Heidelberg in 1851; start of medical studies in Tübingen in 1851, including basic subjects and a single philosophy lecture; continuation of medical studies in Heidelberg in 1852 with focus on natural sciences, including chemistry (Prof. Bunsen and Jolly).
1853	First publication: <i>Über den Kochsalzgehalt des Harns</i> .
1854	First independent physiological experiments, which he also performed at home with the help of his mother.
1855	Medical State Examination in Karlsruhe; <i>Über den Einfluss der Durchschneidung des Lungenmagenerven auf die Respirationsorgane</i> .
1856	Doctorate as Dr. med. with "summa cum laude" distinction. Dissertation: <i>Untersuchungen über das Verhalten der Nerven in entzündeten und degenerierten Organen</i> ; assistant in the Women's Department at the Heidelberg Clinic (Prof. Hasse) in 1856; examination of the tactile sense in hysterical patients; doubts about E. H. Weber's assumptions regarding the anatomical foundations of tactile sense.
1856	One semester of research work with Prof. Johannes Müller and Emil du Bois-Reymond in Berlin; return to Heidelberg; studies on muscle physiology resp. nerve centers of invertebrates; other publications in physiology.
1857	Habilitation in the Medical Faculty at Heidelberg (without writing a second thesis thanks to his dissertation and the "summa cum laude" distinction); begin of unsalaried lectureship at the Medical Faculty at the University of Heidelberg; serious illness ("hemorrhage"), represented in his autobiography as a pivotal experience; application for the position of assistant to Helmholtz during convalescence; alternating lectures on experimental physiology and medical physics.
1858–1862	Founding of a small laboratory at home with some research equipment; first book: <i>Die Lehre von der Muskelbewegung</i> ; additional publication: <i>Beiträge zur Theorie der Sinneswahrnehmung I. Abhandlung: Über den Gefühlssinn mit besonderer Berücksichtigung auf dessen räumliche Wahrnehmung</i> .
1858–1862	Salaried assistant to Helmholtz who accepted appointment at Heidelberg; regular courses in practical lessons on physiology at the new Physiological Institute; lectures on anthropology since 1859; involvement in the Heidelberg Workers' Education Association; acquaintance with Friedrich Albert Lange, August Bebel, and others; publication of the <i>Beiträge zur Theorie der Sinneswahrnehmung</i> (1858–1862); article series in popular journals.
1863	Publication: <i>Vorlesungen über die Menschen- und Tierseele</i> .
1864	Special appointment as professor of anthropology and medical psychology in the Medical Faculty at the University of Heidelberg; <i>Lehrbuch der Physiologie des Menschen</i> Part 1-2 (Part 3, 1865).
1864–1868	Elected as a representative of the City of Heidelberg in the second chamber of the Baden parliament; member of the (liberal) Badische Fortschrittspartei (Baden Progress Party); dealt with issues of legal status of students and school reform; commission report on the draft law concerning the legal status of students at the two public universities in Baden; resignation from the parliament in 1869 due to work load and probably disappointment. <i>Die physikalischen Axiome und ihre Beziehung zum Causalprinzip</i> (1866); numerous publications on medical physics, general physiology, nerve and muscle physiology, general experimental psychology, visual perception; philosophical works mainly on logic; numerous review articles; lecture in 1867 titled "Physiologische Physiologie"; <i>Handbuch der Medizinischen Physik</i> .
1868	Appointment as "extraordinary professor".
1870	Military doctor in the German French War.
1871	Replacement (not successor) of Helmholtz who accepted an appointment in Berlin; salary as scheduled extraordinary professor of medicine; teaching activities in anthropology and medical psychology.
1872	Marriage with Sophie Mau, daughter of a professor of theology in Kiel; first course in psychology.
1873–1874	<i>Grundzüge der physiologischen Psychologie</i> in two volumes; complete print in 1874; appointment as ordinary professor of inductive philosophy at the University of Zurich.

1875	Appointment as professor of philosophy at the University of Leipzig; collecting of scientific devices in a separate room to use for own experimentation and demonstrations; lectures in psychology of language, anthropology, logic, and methodology.
	See the separate overview for the following main publications.
1876	Awarded Dr. phil. h.c., University of Leipzig; lectures in psychology, brain and nerves, and physiology (summer) / cosmology, historical and modern philosophy (winter).
1876	Birth of daughter Eleonore.
1877	Psychological Circle (<i>privatissime</i> , no cost); lectures in logic and methodology (summer).
1879	Founding of the "Institute" for experimental psychology at the University of Leipzig and grant application for material resources; birth of son Max.
1881	Announcement of "Psychophysische Übungen für Vorgerückte" (Psychophysical exercises for advanced [students]);" Edition: <i>Philosophische Studien</i> , Volumes 1-20 (1881-1903).
1882	Renewed application to the Ministry (with first mention of the "Institute"); member of the Saxon Academy of Sciences; practical courses in experimental psychology; ministerial grant of one-time 900 mark (for an assistant?).
1883	Announcement of "Seminar for experimental psychology for advanced [students]"; allocation and conversion of 6 rooms as well as an annual budget; official recognition of the "Institute of Experimental Psychology" at the University of Leipzig.
1887	Awarded Dr. jur. h.c., University of Göttingen.
1888	Appointment as <i>Königlich Sächsischer Geheimer Hofrat</i> ("Royal Saxon Secret Councilor"); relocation of the laboratory and expansion to 11 rooms.
1889–1890	Rector of the University of Leipzig; speech: <i>Philosophie und Zeitgeschichte. Eine Centenarbetrachtung</i> .
1897	Moving to a new university building.
1902	Honorary citizen of the city of Leipzig.
1905	Edition: <i>Psychologische Studien</i> , Volumes 1-13 (1905-1917).
1907	Honorary citizen of the city of Mannheim.
1908	W. Wirth appointed as co-director of the Institute.
1909	Speech on the occasion of the 500th anniversary of the University of Leipzig.
1912	Appointment as a member of the order <i>Pour le Mérite</i> for sciences and arts.
1913	Foundation of the Institute's <i>Völkerpsychologische Abteilung</i> .
1917	Resignation from teaching at the age of 85.
1920	Death on August 31st in Grossbothen near Leipzig.

3 Wundt's Complete Work

3.1 Overview

3.1.1 Definitions and Classification

Despite his penchant for definitions and classification, and his habit of structuring complex issues, Wundt's complete work, and even the individual volumes, are not easy to comprehend. While the immense extent of his work makes it difficult to provide a general overview, the listing of his main publications at the end of this overview may be helpful.

Each of the following chapters contains separate overviews of the corresponding main work:

3.2 Sensory Physiology and Sensory Psychology

3.3 Neuropsychology and Psychophysiology

3.4 Animal Psychology

3.5 General Psychology

3.6 Cultural Psychology ("Völkerpsychologie")

3.7 Ethics

3.8 Epistemology and Methodology

3.9 Philosophy (Metaphysics)

Each Chapter includes sections on the methodology as well as the contemporary and more recent reception of Wundt's contributions. It also includes a few explanatory notes on relevant topics, e.g. the controversy about psychometrics, Wundt on interpretation method and Wundt's plea for a close connection between psychology and philosophy at the end of Chapter 3.9. Access to Wundt's extensive and demanding work is best facilitated by a preliminary overview.

Wundt's System of Psychology and Philosophy

Access to Wundt's extensive and demanding work is best facilitated by a preliminary overview. Wundt attempted to structure and redefine the field of psychology as a whole with respect to basic issues and methodology. He distinguished between two main branches of scientific psychology: experimental psychology and *Völkerpsychologie* (cultural psychology). Cultural psychology, child psychology, and animal psychology seek to fulfill the tasks of a psychological developmental theory. Philosophy is divided into the main subjects of epistemology, metaphysics, and ethics (*Einleitung in die Philosophie*, 1920d). The question of how to delineate psychology, philosophy, and adjacent disciplines has been addressed in various ways. Definitions of the "scientific landscape" (Ziche, 2008) were highly important during the second half of the 19th century for not only the new academic discipline of psychology, but also for systematic and institutional reasons.

Access to Wundt's work will be easier using modern designations of subject areas, e.g. general psychology, cultural psychology, neuropsychology, and psychophysiology. Since the German term "Wissenschaftstheorie" (theory of science) was uncommon at that time, *epistemology and methodology* will be used here instead. For Wundt, it was fundamental to distinguish between *mental* science and *natural* science. As psychology requires a unique theory of science, the essential epistemological distinctions must be clarified (c.f. Chapter 3.8).

To begin with, several fundamental terms are explained and further elaborated in order to elucidate Wundt's position. These fundamental terms include *inner experience, psyche, mind, consciousness, and voluntary activity*. Since Wundt elaborated a unique epistemological framework intended to delineate the scope of *experimental* psychology and to restructure the methodology of *empirical* psychology, some introductory remarks are appropriate. The following chapters provide additional quotations, comments, and precise references.

3. 1. 2 Fundamental Distinctions

Empirical Conception of *Psyche* (Psyche, Seele, Seelisches)

Psyche (soul) is a term describing the "inner experience being in constant flow." The psyche (or the mental individual) is "nothing more than the connection of psychological processes, which represent the sum of our inner experiences, as well as representations of thoughts, feelings, and motives. It assembles itself in consciousness into a unity and develops in a gradual sequence into self-conscious thinking. This basic unity is evident and certain within the conception of self. Due to objective characteristics, it is assumed analogously that a self-conception of a unity of psychological states exists in other subjects.

However, Wundt distances himself from philosophical and religious postulates of an immortal essence (soul) and from references to the philosophical idea of an *absolute mind* ("Weltgeist"). Psychology should not be derived from metaphysical assumptions. Wundt stated that metaphysical assumptions belong to a period of development that lasted in psychology longer than in other sciences. However, here too, it is left behind, since psychology has developed into an empirical discipline operating with methods of its own, and since the "mental sciences" have gained recognition as a large area of scientific investigation distinct from the sphere of the natural sciences. The term "Seele" (soul) and the corresponding adjective "seelisch" are frequently used in Wundt's books and will probably be understood by many readers even today in a more or less distinctly transcendent sense, according to the Christian doctrine of an immortal personal essence or substance.

The accusations that were directed against Wundt's "psychology without soul" and "denial of the soul" show how important this aspect was for many psychologists and the general audience at that time, and probably still is today. In the following, the terms *psychical* and *mental* are used. The terms *spirit* and *spiritual*, which are sometimes used in English translations of "Geist" ("geistig") are avoided here because of their close association with religious notions or metaphysical beliefs about immortal being.

Mind, Mental, Spiritual (Geist, Geistiges) and Consciousness

The distinction between the mental and the physical, according to Wundt, originates in the reflection on the contents of experience, and not from a simple contrast between outer and inner experience, nor from philosophical reasoning about mind and matter. However, there is no assertion of a mental (spiritual) world at odds with a physical world (as dualism postulates), but rather mental processes are emerging and being added (in co-evolution) to the organism in the course of evolution. Life is a unitary, psychological, and physical process that is viewed from different perspectives in order to recognize general laws as well as psychological-historical developmental laws. Mental (psychical) processes are to be investigated empirically, however, in accordance with their categorical distinctiveness.

Psychical and *mental* (psyche and mind) often seem to be used synonymously by Wundt. However, these terms may have either a descriptive or a categorical meaning. The flow of experience constitutes the psychological process that corresponds to the parallel neurophysiological process. Psychological changes are caused solely by psychological causes. The terms mental and mind emphasize the *categorical distinction* between psychological and physiological processes. Apart from the fundamental aspect of being related to an experiencing subject, Wundt delineated *three interrelated principles*, namely the *value orientation* of mental processes with respect to sensual, intellectual, aesthetic, and ethical values, the individual's *voluntary actions*, and the underlying *principle of purpose*, as evident subjectively in self-reflection and, also, manifest in objectively occurring actions and effects. The human subject is defined as *thinking* and *acting voluntarily*, according to *values* and *purpose*.

Consciousness means "connectedness of psychological content." Consciousness exists in the coherent flow, actuality, and context of experience, not only in the *inner* experience, but in the "entire experience in its full reality." "Consciousness is pure actuality in the flow of sensations, feelings, and ideas" without postulating an experiencing (or even metaphysical) *ego*. Consciousness encompasses the entire content of the immediate experience, i.e. the representation of sensory impressions as well as the "coming and going of ideas and feelings." Wundt assumed a continuum of consciousness processes with variable clarity according to the attentional focus. He also described higher states of consciousness and self-consciousness and dealt with dream and hypnosis. However, he rejected the conception of "the unconscious." In biological evolution, there is an ontological continuum in the gradual formation of the central nervous representation of endogenous states of the organism and of sensory impressions. Such representations are precursors of consciousness. Animal psychology reveals equivalents in communication, problem solving, and social organization, thus contributing significantly to the conception of the higher mental functions.

Epistemology and Methodology: Postulates, Categories, Principles, and General Terms

Epistemology ("Erkenntnistheorie") is a branch of philosophy concerned with the origin and limitations of knowledge and the justification of scientifically derived knowledge in natural and mental sciences (humanities). Based on logic and the laws of reasoning, a system of categories, fundamental principles, and general aims is developed to guide this endeavor for the purpose of acquiring knowledge. *Methodology* comprises a system of principles, rules, and standards, which indicate how to perform scientific studies and critically evaluate the findings. It describes the psychological methods adequate to empirically assess

the phenomena being investigated. Ideally, a coherent relationship is established between epistemological presuppositions, methodological principles, and the selection of valid methods.

Categories designate fundamental concepts of *universal meaning*, such as time and space, substance and actuality, cause and purpose, as elaborated by Aristotle and Kant and extensively investigated by Nicolai Hartmann. Wundt is probably the author who provided the most profound specification of categories relevant to psychology. Like Hartmann, he pointed out incidents of category mistakes caused by the inappropriate and misleading use of certain categories, e.g. by referring to the category of purpose (intent) in the natural world instead of reserving the idea of purposefulness (means and ends) as a characteristic of mental processes in *humans*. *Postulates* are basic assumptions or principles that underlie the systematic acquisition, organization, and application of knowledge. *General terms* refer to definitions and theoretical constructs at the core of an empirically based science and should be reformulated on the basis of further empirical evidence. The *principle of psychical causality* lies at the core of Wundt's *system of principles*. These ideas are closely intertwined with the theoretical assumptions and experimental investigations relating to his *theory of apperception*, which reflects a profound influence from Gottfried Wilhelm Leibniz. Later, this apperception theory was expanded by Wundt to constitute his voluntaristic view as opposed to sensualism and associationism, which are predominant in the English tradition of John Locke, George Berkeley, and David Hume, as well as to the supposedly intellectualistic approach particularly evident in Herbart's "mathematical" psychology.

Wundt defined his epistemological position as *critical realism*. In accordance with Kant, he contradicted metaphysical derivations of psychology (as in the case of Herbart or Lotze) and resolutely opposed the idealistic as well as the materialistic and positivist view. Pointing to essential *category mistakes*, Wundt would have certainly rejected narrow, modern-day physicalistic views, such as those found in neuro-reductionism and computer-based modelling of psychological theories. Psychology requires a thorough reflection on epistemology, especially on categories and basic postulates, and a consequent methodology.

Intellectualism and Voluntarism

One of the dimensions in classifying philosophical ideas is intellectualism/voluntarism, a distinction that was introduced by Wundt and adopted by other authors. Such philosophical presuppositions ultimately govern the general approach and preferred methodology in empirical psychology. *Intellectualism* ascribes the priority to ideas, thinking, and reflection, and intends to investigate the formation of mental representations, such as in Herbart's conception of psychology, with little concern about motivation and emotion. Likewise, this basic orientation is evident in some modern research orientations in cognitive psychology (cognitivism) and attempts at mathematical psychology and modelling. *Voluntarism*, conversely, assumes that volition is fundamental to the conception of psychology. The dynamics of motivation are central to development on an individual and cultural level in accordance with the theory of biological evolution. *Will, volitional activity, voluntary action, drive and instinct* are generic terms referring to the entirety of volitional processes (motivation). The polarity between intellectualism and voluntarism also reflects the controversial views of John Locke ("tabula rasa" statement) and proponents of English sensualism, which is opposed to Gottfried Wilhelm Leibniz's statements about the continuous process of perception and self-conscious apperception being motivated in accordance with the individual's striving ("appetitus").

Philosophical Presuppositions

The intellectualism–voluntarism debate is one of the philosophical issues that is significant for the general conception and delineation of empirical psychology. This is even more true of postulates about the soul as a transcendent entity or the rejection of such beliefs as well as the continued controversies about *idealism* versus *materialism*, the *mind-body problem*, *free will* or *determinism*. Wundt reviewed such propositions and controversies in his philosophical texts and elaborated on certain "ontological ideas." He is convinced that psychology should not be *derived* from metaphysical assumptions. However, this does not exclude discussion on a philosophical level. Such *metaphysical* (ontological) postulates beyond inner experience and the experience of the physical world, apparently have a significance that extends from a merely philosophical discourse to a discussion of basic methodological issues and research programs in empirical psychology. In critically analyzing presuppositions pertaining to theory of science and methodology, empirical psychology is dependent on interdisciplinary cooperation with field of philosophy.

The Concept of Psychophysical Parallelism, Perspectivism, and Monism

The term *psychophysical parallelism* was coined by Wundt. However, he rejected parallelism as a metaphysical postulate assuming two "substances." Instead, he emphasized the epistemological relevance of taking two perspectives. Wundt followed Leibniz in categorically distinguishing between two aspects of causation within the principle of sufficient reason, namely, the *principle of cause* in physiology and the natural sciences, as opposed to the *principle of purpose* in psychology and the mental sciences. Both perspectives, natural causality and psychical causality, should be appropriately integrated into the design of psychological investigations. A causal interaction between mental and physical processes (mind and body) is not assumed.

Human reasoning aspires primarily toward a consistent and non-contradictory representation of reality in the sciences and philosophy, rather than seeking an especially “economic” and “parsimonious” explanation. In many cases, Wundt has pointed out the importance of complementary viewpoints and strategies. The psychophysical processes require two categorically different but complementary reference systems. This epistemological and methodological conception can be called a perspectivistic monism, or monistic perspectivism (Kim, 2016). Systematic perspective taking is a characteristic trait of Wundt’s style of thinking, which he in turn attributed to Leibniz.

3. 1. 3 Topics in Wundt’s Psychology

Wundt wrote repeatedly about classifying psychological topics and philosophical orientations with the obvious aim of restructuring the relatively vague field of empirical psychology. He explicitly classified psychology as an *independent* discipline, however, one that is related to the natural and mental sciences. On methodological grounds he distinguished between *experimental* psychology, i.e. controlled *self-observation* in *single* subjects in the laboratory (therefore referred to as “individual” psychology), and *Völkerpsychologie*, i.e. *observation and interpretation* of intellectual products and other societal achievements in communities, i.e. those which result from the activities of *many* individuals. It will be easier to gain access to his multifaceted work by using today’s terminology.

Neurophysiology, Neuropsychology, Sensory Physiology, and Psychophysiology

Proceeding from his primary neurophysiological work, Wundt created a research program for sensory psychology and psychophysics, first in Heidelberg and then in Leipzig, where he had personal contact with Fechner. The chapters on neurology, neurophysiology, and neuropathology constitute about a third of Wundt’s *Grundzüge*. Contrary to the attitude of neurologists of his time, Wundt was convinced that neuropsychology should primarily follow *psychological* hypotheses with the task of developing *correlative concepts* (“Korrelatbegriffe”), i.e. corresponding psychological and neurophysiological concepts representing parallel processes. Wundt’s attempt at modelling fronto-cortical control systems as well as efferent and afferent neural pathways and circuits underlying the process of apperception is an example of this research strategy. While the anatomy and physiology of the central nervous system are fundamental to psychologists, physiological methods can only be supplementary, such as by recording expressive movements and speech or the autonomic correlates of emotional reactions.

General Psychology

Wundt himself did not use the term *general psychology*, which nowadays is the appropriate term for the main areas of his research and formation of theories, including the theory of apperception, the theory of feelings and affects (emotion), and the theory of volitional activity or psychology of will (motivation). According to Wundt, it is preferable to study the process of *thinking* in parallel with the psychology of language, instead by mere introspection. Wundt elucidates this approach in the context of his *Völkerpsychologie*.

Apperception is the central theoretical construct in Wundt’s general and cultural psychology. Originally, apperception merely referred to the active control of attention and the process of transforming sensory impressions (perceptions) that were initially rather weak into a (self-)conscious sensory and cognitive representation. The psychological concept of apperception, which was originally proposed by Leibniz, was notably adopted and modified by Baumgarten, Kant, and Herbart. Wundt’s contribution was to elaborate psychological methods and experiments and to transform the general philosophical concept into a theoretical construct in psychology as well as to initiate an empirical research program. This required a multimodal conception, in which sensory, cognitive, emotional, and motivational process components are integrated into the highest synthesis of psychical processes.

His *theory of feelings and affects* describes simple and compound feelings as well as affects and their intense bodily concomitants and typical dynamics of “affect resolution” (“Affektlösung”). Recalling the three-dimensional classification of colors and hues, Wundt developed a three-dimensional classification scheme of emotional states with three bipolar arrangements of the qualities of pleasant-unpleasant, tense-relaxed, and excited-depressed (or pleasantness-unpleasantness, arousal-relaxation, tension-release).

Wundt did not maintain the traditional assumption, which ascribes the continuous psychical process to a “soul,” an ego, or another metaphysical structure or substance underlying the psychical phenomena. He claimed that the connection of psychical processes cannot be established by anything other than a general and variable psychical function. The related dynamics stem from the basic function of volitional activity (will), which is already present in the intentional control of attention. For Wundt, the origin of developmental dynamism can be seen in the elementary expressions of life as well as in reflexive and instinctive activity. Based on this, Wundt constructed a continuum leading from controlled attention, volitional activity, and purposeful actions to ethical decisions. His *general theory of motivation* regards the biological evolution and the cultural

development as creative achievements consisting of many volitional activities. From this, he eventually inferred the philosophical idea of voluntarism, yet emphasized the independence of the psychological-empirical and metaphysical levels. During Wundt's time, the evolutionary point of view advanced by Darwin was still uncommon in psychology. Wundt interpreted intellectual and cultural development as well as biological evolution as a general process of development, although he rejected the abstract ideas of entelechy, vitalism, and animism.

Cultural Psychology

In addition to *general psychology*, *cultural psychology* constitutes the second major part of Wundt's psychology. He did not choose the term *cultural psychology*, although he thought it was a suitable designation. His cultural psychology research program arose from the idea to investigate the fundamental "laws" of the development of human culture. Certain psychological principles can be recognized within the cultural process, from language, fantasy, art, and religion to the realm of political and societal developments. The theory of apperception and motivation (psychology of will) form the common theoretical basis for working out the most important developmental motives and a comprehensive *developmental theory of mind and culture*. Wundt was mainly interested in earlier stages of cultural development, but he also discussed social and political developments of his time. In the purpose-setting activity of human motivation and in the cultural community, creative syntheses as well as planned consequences and unwanted side effects of human action unfold.

Ethics

Wundt rejected the assumption of an absolute or transcendent rationale (God, the Absolute) in his system of ethics. However, he assumed that, guided by the idea of *humanity*, general, personal, and social norms can be established. Wundt's system of ethics typically requires a systematic change of perspective between the normative system of ethics *and* the empirical contributions from cultural psychology vis-à-vis the development of ethical behavior. His psychological studies deal with how ethical principles emerge and change culturally in the course of human mental development and also include reflections on the further development of culture.

Multimethod Approach

Experimentation in psychology should be supplemented by comparative and qualitative (interpretative) methods. Wundt's statement dates from 1862 in his first book on psychology. Later, he provided a standard definition of the psychological experiment and indicated general rules of comparative investigation and critical interpretation with respect to the hermeneutic tradition. His research on the *psychology of language* exemplifies his use and combination of experimental and statistical methods, observation, speech recording, comparative studies, and methods of interpretation, each of them having their own place in a *multimethod approach*. In this sense Wundt was both an experimenter and a hermeneutic.

Structure, Integration, and Coordination

Wundt's main books, i.e. *Grundzüge der physiologischen Psychologie*, *Völkerpsychologie*, *Logik und Wissenschaftslehre*, *Ethik*, and *System der Philosophie*, comprise 21 volumes and contain an immense wealth of information. Wundt took interest, of course, in structuring this domain and suggested detailed classification schemes, which is evident from the number of pages of Content in his books. Apart from his system of *categories* and *principles*, there is, although less explicit, the relationship between *elements and compounds*, e.g. *elementary* and *compound* feelings, and *meta-relations*. Thus, the apperception theory is about *integration* (or synthesis) of the psychical process from the components, i.e. sensations, feelings, thoughts, and motives. The psychophysical parallelism of psychical and neurophysiological processes requires the strategic *coordination* of explanations: on one side according to *psychical causality* (the principle of purpose), on the other side according to *natural causality*. *Perspectivist monism* is a highly abstract term for coordinating categorically different reference systems and integrating the modalities of psychical processes. – Knowledge of these basic topics is obligatory for understanding Wundt's work. However, the reception is still hampered to a large part by misunderstandings, stereotypes, and superficial judgement.

These topics will be expanded and further explained in Chapters 3. 2 to 3.9 and an attempt is made at reconstructing Wundt's system of categories and principles as well as his theory of apperception in Chapter 5. The final chapter, Chapter 6, summarizes his essential contributions.

3. 1. 4 Continuity in Wundt's Program

Wundt's general approach appears in his first book on psychological issues (*Beiträge zur Theorie der Sinneswahrnehmung* (Contributions to the Theory of Sensory Perception, 1862) and he continued to develop this approach in subsequent decades. The internal consistency between and within Wundt's main works and their revised editions has been repeatedly discussed and assessed in different ways. Fundamental revisions of theoretical positions, as was often the case with other eminent psychologists, cannot be convincingly asserted in Wundt's case. However, a gradual development and shift in his main interests as well as a gradual expansion of the fields that most interested him can be observed. Thus, theoretical extensions and methodological progress are evident, as are several ambiguities and contradictions. The most important topics and Wundt's methodological perspective are already laid out in the *Vorlesungen über die Menschen- und Tierseele, 1863* (Lectures on human and animal mind).

Danziger (2001a, p. 91-92) pointed out some intrinsic difficulties, such as the fact that Wundt discussed certain topics repeatedly and at various points in his work, often using different formulations and adding new thoughts. He also changed some of his views over time without clearly mentioning it. Therefore, it is difficult to refer only to specific parts in the development of his thought without providing a general overview. Wundt did not stand still. "In fact, it is not difficult to detect certain consistent trends and patterns in the development of his ideas. For example, Wundt shows an unmistakable tendency to become gradually less sanguine about the prospects and scope of experimentation in psychology. Correspondingly, his psychological explanations tend to deviate more and more from the models provided by nineteenth-century natural science. As his views mature, they also become more idiosyncratic, more characteristically 'Wundtian'." ... "But an appraisal of something that can justifiably be called 'Wundtian psychology' has to be based largely on the work he produces at the height of his influence during the last two decades of the nineteenth and the first decade of the twentieth century."

The most obvious developments in Wundt's general ideas are probably the more critical limitation of his initially optimistic appraisal of measurement and experimentation in psychology and his gradually increasing interest in cultural psychology and its methodology. Wundt's initially strong rejection of Kant's assessment that psychology cannot be a discipline comparable to the exact sciences and the gradual expansion and liberalization of his own methodology are still important issues. Wundt's position obviously converged with Kant's statement (cf. Chapter 3. 8). Although experiments in psychophysics are still considered a prototype of exact methods, comparative analysis and the methodology of interpretation (hermeneutics) became more and more important for Wundt's psychology. Regarding the revision of specific theoretical positions, Wundt's assumption about "unconscious conclusions" is also noteworthy. However, Wundt withdrew this assumption, which was shared by Hermann Helmholtz (cf. Araujo, 2012, 2016 pp. 167-208); Fahrenberg, 2015a, and Chapters 3. 2 and 3. 5. 3).

Grundzüge der physiologischen Psychologie, 1874 (Basic Principles of Physiological Psychology)

This book is the classic text in the field of *general psychology* and provided the foundation for experimental psychology based on Wundt's research at Heidelberg University. In fact, the first edition is still cited as an historical document and in psychology, often without noticing that a three-volume edition emerged from Wundt's research program in his laboratory at Leipzig University. The revised and considerably expanded 5th edition (1903-1905) and 6th edition (1908-1911) contain about 2,000 pages and are probably read even less today because of their length and comprehensiveness. It is, however, a fundamental summary of the state of knowledge, evaluated from the point of view of the eminent founder of experimental psychology. Wundt's *Grundzüge*, of course, is not a simple textbook, but a highly differentiated compendium and handbook of experimental and general psychology that sought to investigate the immediate conscious experience, including sensory representations, feelings, affects, and volition. It also developed the theory of apperception. *Apperception* is a multi-referential construct, a complex system of theoretical assumptions about dynamic psychological processing and integration. Wundt's sophisticated conceptualization appears to exceed much of the theorizing in recent general and cognitive psychology.

Völkerpsychologie. Eine Untersuchung der Entwicklungsgesetze von Sprache, Mythos und Sitte, 1900-1920, 10 vol. (Cultural Psychology. An investigation into developmental laws of language, myths, and ethics), which also contains the evolution of arts, law, and society, is a milestone project, a monument of cultural psychology at the beginning of the 20th century. Wundt presented an early outline of this work in his *Vorlesungen* (1863) and the project became his main undertaking in later years. Wundt investigated the dynamics of cultural development in accordance with psychological and epistemological principles. The psychological principles were derived from his general psychology of *apperception* (i.e. the theory of higher integrative processes, including association, assimilation, and semantic change) and *motivation* (i.e. will, drive, actions, and volition) as presented in *Grundzüge der physiologischen Psychologie*. Wundt recognized about 20 fundamental dynamic motives in cultural development. His inquiries were guided by basic principles, namely, the *principle of psychological causality*, the *principle of emergence* ("creative synthesis"), the *principles of context and contrast*, as well as the *principle of wanted and unwanted consequences of actions*. Rules of *generic comparison* and *critical interpretation* are explained in his *Logik* (1921, vol. 3), and, whenever appropriate, he used findings from experimental research and comparative methods within a multi-method approach.

3.1.5 Overview and Structure of Wundt's Complete Work

During the Heidelberg period beginning in 1853, Wundt published 10 articles on physiology and neurophysiology (including muscle physiology, eye movements, nerve conduction, and Curare), a *Lehrbuch der Physiologie des Menschen* (Textbook of human physiology, 1865, 4th ed., 1878) and a *Handbuch der Medizinischen Physik* (Handbook of Medical Physics, 1867a). He also wrote about 70 reviews of publications in the fields of neurophysiology and neurology, physiology, anatomy, and histology.

His subsequent work on psychology, and then philosophy, evolved over the course of 50 years. First, Wundt regularly revised and expanded his main works, namely, *Grundzüge der physiologischen Psychologie* (1874) and *Völkerpsychologie* (1900-1920), the two main pillars of his work in psychology, as well as his *Logik und Wissenschaftslehre* (1880), *Ethik* (1886), and *System der Philosophie* (1889a). Second, he created bridges between psychology as a specific empirical science and philosophical presuppositions ("metaphysics" in Wundt's sense) through numerous journal essays on epistemological and methodological issues. An important development here is his essay in 1913 against the separation of psychology and philosophy, which continued the theme of both inaugural lectures in Zurich and Leipzig in 1874 and 1875, respectively (Wundt, 1874b, 1876).

Highly significant is the treatise on Leibniz' philosophy and psychology (1917). Third, there are early and programmatic texts, including the introduction to the *Beiträge zur Sinneswahrnehmung* (1862), the introduction and subject matter contained in the *Vorlesungen über die Menschen- und Tierseele* (1863, 6th ed. 1919), and the unconventional philosophical and psychological discussion on the *Kausalprinzip* (1866). Fourth, there are the publications, apart from the *Vorlesungen*, written for a wider audience, i.e. without detailed scientific discussions and only a few references. These include *Einführung in die Psychologie* (1911b), *Elemente der Völkerpsychologie* (1912b) and *Sinnliche und übersinnliche Welt* (1914). Fifth, the autobiography *Erlebtes und Erkanntes* (1920b) provides an insight into Wundt's personal life experience as well as his professional environment and scientific work. His *inaugural speech as Rektor* of the University of Leipzig (Rektoratsrede, 1889c) as well as his *Über den Zusammenhang der Philosophie mit der Zeitgeschichte* and other academic lectures to the public add additional substance to these subjects.

In view of this large intellectual undertaking, however, the question remains about what is missing or what would be desirable for didactic purposes. In this sense, there are two lacunae: (1) a concise exposition of his *guiding ideas*, and (2) a comprehensive textbook presenting his *epistemology and methodology*, including the specific methods.

3.1.6 Problems in Comprehension

In retrospect, Wundt chose some book titles and specific terms that unfortunately led to serious misunderstandings. However, he was aware of this problem in some instances and discussed alternative terms, for example in "Grundzüge der physiologischen Psychologie" and "Völkerpsychologie."

Physiologische Psychologie in fact does not aim at physiological explanations of mental processes, but rather at *general psychology* that makes strategic use of physiological methods as auxiliary methods in certain fields, especially in psychophysics and research on emotions (psychophysiology). Wundt tried to indicate this aspect by using the lowercase adjective "*physiologische*" *Psychologie*.

Völkerpsychologie does not mean ethnology, but rather *cultural psychology*, which forms the empirical basis of the *developmental theory of the mind*. Wundt considered "Entwicklungspsychologie" (developmental psychology) to be too general and wavered between "soziale Entwicklungspsychologie" (social developmental psychology) and "psychologische Anthropologie" (psychological anthropology). He finally opted for the term "Völkerpsychologie," coined by Heymann Steinthal and Moritz Lazarus, instead of introducing the new term *cultural psychology*. Wundt thought that "culture" would not include the *entire* mental life of the people (*Völkerpsychologie und Entwicklungspsychologie*, 1916). The choice of "folk psychology" or "ethnic psychology," as in English translations, is completely misleading. In the present book, from now on, "cultural psychology" is used, unless reference is made to the title of the 10-volume work.

Individual psychology does not mean differential psychology, but rather investigations that rely on single human subjects and the use of controlled self-observation, in contrast to the observation and interpretation of objective materials originating from mental processes, including language, forms of religious life, works of art, law, and societal accomplishments including available statistical (demographic) data on certain aspects.

Logik represents formal logic, concept formation, and reasoning, however the three volumes are predominantly concerned with the theory of sciences ("Wissenschaftslehre"), i. e. the natural sciences and especially the mental sciences. Volume 3 includes about 250 pages on the *epistemology and methodology of psychology*, in which Wundt's *system of principles* is also

presented and summarized. In addition, there are further fundamental terms in Wundt's writings that could lead to misunderstandings, for example: *Self-observation* does not refer to naïve introspection, but rather to trained and repeated self-observation assessed in accordance with standardized and experimentally varied conditions.

When writing about Wundt in English, it is first necessary to distinguish between his terminology and current German terminology, and second, to find an appropriate translation while preserving, as much as possible, essential denotations and connotations, which belong to Wundt's characteristic semantics. Short citations isolated from the context can be misleading. The only way out seems to be by providing detailed original quotations and clearly distinguishing quotations from the comments and paraphrases provided by the author of this book. With respect to his sophisticated conceptualizations and style of writing, one could arrive at the conclusion that the preferable strategy could be to learn German, which was quite usual for foreign students who came to German universities around the turn of the century in 1900. It is clear that the widespread unawareness or ignorance of Wundt's seminal contributions has much to do with the language barrier.

A selection of notable terms that appear to be difficult to properly translate and thus have invited misunderstandings are contained in a specific *Glossary* that includes suggested translations (Chapter 3. 11). Unless otherwise stated, the quotations from German publications were translated by the author with the assistance by Dr. Frank Illing and Aaron Woeste.

Terminological Difficulties

The distinction between cognition, emotion, and volition (motivation) in today's psychology is a continuation of the threefold division of consciousness into the faculties of understanding, i.e. forming and combining ideas, feeling, and will, as proposed by Johannes Nikolaus Tetens (1736–1807) and others. Wundt distinguishes between sensation, feeling and affect, and volitional activity. To be precise, he conceived such psychical processes as central *representations* (*Vorstellungen*) of sensory input, thoughts, feelings, etc., experienced consciously and occurring parallel to underlying central nervous system processes. Extensive descriptive sections are provided in the *Grundzüge* (6th ed. 1908-1911). However, Wundt does not use today's general terms *perception* (*Wahrnehmung*) and *behavior* (*Verhalten*). While *perception* could be approximately replaced by *sensory representation* and *apperception*, the term *behavior* has no equivalent in Wundt's work. Wundt is primarily concerned with the psychical process, its many modes of overt expression, and its neurophysiological basis.

The fact that the general term *Verhalten* (behavior) does not appear in Wundt's writings might be surprising today and perhaps regarded as an indication of a narrowly defined "psychology of consciousness." Wundt does not use the generic term *behavior*, but rather distinguishes – in a categorically nuanced manner – more precisely between elementary reflex activity and motor activity (motion), facial expression and gestures, speech, instinctive activity, drive action, choice reaction, and purposeful (intentional) action. This multi-faceted approach and psychological experimentation distinguishes Wundt from other authors who are confined to the *psychology of experience* and the *phenomena of inner perception*, or to *behavioral studies*.

The scope of Wundt's methodology is also evident, from the measurement of complex motor reaction times and the psychophysiological recordings in his research on emotions to the observation of facial expression and his highly differentiated analysis of language and speaking (including speech disorders, recordings of speech sounds, as well as the analysis of language as a form of gesture or expressive movement). One cannot suppose that Wundt the physiologist, who researched reflex activity in the motor and autonomic systems and was programmatically involved in neuropsychological modelling of the apperception processes, wanted to ignore "behavior." On the contrary, "behavior" today has a broad and vague range of meanings. If uncommented this expression would level out the categorical distinction between reactive behavior and deliberate purposeful actions (and philosophical traditions may become obvious referring to the English empiristic-sensualist psychology in contrast to Leibniz's assumption of an active striving and wanting subject).

Undoubtedly, Wundt's psychological research is focused on psychical (mental) processes and the cultural achievements of society. Nevertheless, he does not exclude behavioral and physiological aspects, as was the case in a strictly introspective or phenomenological psychology. Self-activity and the spontaneity of psychical processes are particularly fundamental to Wundt and he pointed out the "mechanistic" concepts of traditional Anglo-American sensualism and empirism (associationism).

At any rate, terminological difficulties that arise 150 years later must be taken into account. In many ways, Wundt's terminology – and that of his time in general – does not correspond to terms in modern use and thus appears outdated. Certain authors have opted for a translation into today's terminology, including Mischel (1970, p. 6, footnote), who declared that he wants to "translate" the meanings of the *principles of psychical causality* "rather than focussing on the outmoded philosophical idiom in which he explicitly formulated them." In fact, understanding could be made easier at least in some instances, if, for example, Wundt's fundamental principle of "creative synthesis," which existed long before the concept of *supra-summativity* in Gestalt psychology, were called the "principle of emergence." This would connect this concept to more recent discussions on system theory or to the discussion on emergence and supervenience in theories about consciousness and the brain.

Occasionally, but not consistently, Wundt used modern terms, including *complementarity*, *relativity*, and *process*. It appears justifiable to adopt *process* as a general term denoting the state and dynamic change of consciousness.

Wundt's Style of Thinking and Writing

From today's point of view, access to Wundt's principle thoughts is complicated by the extent of his writings and his *style of thinking*. His *style of writing* might also seem cumbersome today, or at least not as concise as is custom due to the lack of space in journals and simplistic presentations in textbooks. Even for today's German readers, Wundt's style is quite difficult since it is sophisticated and contains many qualifications, but, then again, it also very succinct. The greater challenge, however, might be Wundt's style of reasoning. He not only makes assertions, but also discusses them profoundly and deals with opposing arguments and findings. What initially appears to be a contradiction can be dissolved through deeper examination.

An idea is often developed by beginning with a history of the problem, but not in a linear way or in clearly differentiated steps, but rather by rapidly changing perspectives. For example, he often begins to develop an idea, differentiates it, and then refrains from adopting this single perspective, but eventually returns to it because it is indispensable. This close interplay of perspectives and the deliberate change in points of view is the formal expression of his style of thinking. He considers the *principle of consistency* to be more important than the *principle of parsimony*, that is, simplicity and economy of theories. Wundt emphasizes again and again that the endeavors of human reason in philosophy and the natural and mental sciences should aim at a *unified representation* of the world. The attempt to construct "a theory of all" in modern physics originates from the same aspiration. The recurring reflections on epistemology and methodology were unusual in textbooks of Wundt's time, at least in such density, which stands in contrast to the almost complete absence of thorough investigations into epistemological and philosophical presuppositions of empirical psychology in the majority of today's textbooks.

Wundt's style of thinking can be characterized as perspective-oriented, in which different views are contrasted. For example, he repeatedly distinguishes psychological from physiological issues and interprets psychological functional relationships in the context of both the principles of causality and purpose. His argumentative and perspective-oriented style of thinking corresponds to his style of writing, which was obviously shaped by the Latin grammar taught at school and might seem rather cumbersome today as it contains subclauses and many qualifications. On the other hand, Wundt was quite able of writing very concise, memorable sentences in a form similar to dictionary entries or maxims. Former students reported that his lectures, which were given without notes to a large audience, were very impressive (e.g. Baldwin, 1980; Hellpach, 1948; Kraepelin, 1920). Also, Wundt's letters reveal his other sides, including private inclinations to write poetry and discuss classical literature, specifically Shakespeare, in a literary reading circle, which is noteworthy in this context. Wundt has a unique profile.

Might Wundt himself have contributed to misunderstandings through his ambiguous style of writing? Reading Wundt demands viewing issues from different angles and positions and taking several perspectives into account. At the same time, Wundt postulates the different, or even contradicting, points of view as complementary to each other, eventually leading to a consistent view. Wundt's remark about Gottfried Wilhelm Leibniz applies to himself as well: "the principle of equal rights of complementary points of view" and positions that "complement each other, but that can also appear as opposites, and which are settled only by a more profound view of things" play an important role in his own thinking (Wundt, 1917, p. 117, on the occasion of the bicentenary of Leibniz's birthday). This demanding perspectivism makes Wundt's reflections and reasonings richer, but at the same time makes reading and delving deeper into his work more strenuous.

3. 1. 7 Principles of Presentation

The following overview is based on important quotations from Wundt's main works in order to achieve a holistic understanding of his conception. Most historians that have written about Wundt only considered certain aspects of his entire work. However, Wundt's psychology cannot be sufficiently understood without recognizing his general intentions, or his epistemology and methodology. At the core of this epistemology is his particular notion of *psychophysical parallelism* and his conviction that psychological explanations should be guided by the principle of causality as well as the principle of purpose: natural causality and psychical causality.

Selection of Quotations and Mode of Citing

Since Wundt repeatedly revised and supplemented his books, some of his basic assumptions and principles may appear in varying formulations. Such differences are usually marginal, but in some instances more distinct. These parallel passages and textual deviations in the subsequent editions of Wundt's works constitute a considerable problem for any attempt at a precise representation. In addition, several important topics, especially with respect to epistemology and methodology, are dealt with

in relatively long essays in the *Philosophische Studien* and *Psychologische Studien* were also revised and published separately in his books containing collected essays and speeches. Wundt's essays remain instructive for their insight into the formation of his positions as well as the criticism expressed in reviews of his time (cf. Chapter 4). A meticulous analysis of the development of Wundt's ideas based on text variants in chronological order is beyond the scope of this book. However, Van Hoorn and Verhave (1980) have tried to provide a diachronic analysis of several concepts from the *Grundzüge*, taking all subsequent editions with respect to preliminary forms, modifications, and their formulation at a more mature stage into consideration. In order to locate certain quotations and compare textual variants, the texts must be available, which is hardly the case, even at university libraries. As a result, the most "mature," i.e. most recent or last revised editions of Wundt's primary publications, are used here in most cases.

Reception research has demonstrated that Wundt was often quoted either insufficiently or incompletely, or paraphrased by an author, such that the content and intention of his contribution was inadequately represented, thus giving rise to serious misunderstandings. These risks can only be countered by the use of longer original quotations. Even literal quotations do not guarantee that the meaning of a statement is correctly recognized and represented. This is evident in reviews and commentary on Wundt, in which he is hardly quoted, but rather represented in an abridged fashion, which supposedly "gives the essence" of what Wundt meant in the eye of the respective author. In this book, complete quotations from Wundt and the secondary literature are provided. As a rule, passages are not abridged. However, due to Wundt's often very long and complicated sentences with many subordinate clauses, this could not always be achieved. The citations of Wundt in the secondary literature were usually left unchanged; however, it was not always possible to precisely identify the sources. Wundt's main ideas and *system of principles* were quoted as extensively as possible from the last edition of the *Logik* (1921). Spaced fonts, which are used by some authors quite abundantly, have been typed normally, as well as italics, except for important and emphasized terms. Italics are used mainly for the titles of Wundt's publications and are shortened in later chapters to a significant term from the title, i.e. *Grundzüge* (Basic principles of physiological psychology), *Grundriss* (Outlines of psychology), *Vorlesungen* (Lectures on human and animal mind), *Ethik* (Ethics), *Logik* (Logic and theory of science), and *System* (System of philosophy), etc.

While reading, it will be noticed that essential quotations from Wundt's work are repeated, some even several times. This redundancy is due to the summaries of sections and chapters that are provided. However, it is also meant to emphasize the general structure, linkage and consistence of his conception.

3. 1. 8 Bibliographies

The first bibliography was compiled in 1927 by Eleonore Wundt. Meischner and Metge (1979) and Arnold (1980) continued this task. Robinson (2001a) compiled a bibliography citing 540 publications from between 1853 and 1926. However, there are problems concerning definition. The number of publications would be larger if all the translations and revised editions were included. Some books have been translated into 12 languages. Other directories, such as the *German National Library DNB*, Frankfurt a. M., or *The Internet Archive*, San Francisco, are more or less comprehensive bibliographies, e. g. Araujo (2016). Kim (2016) or Watson (1974-1976). *Eminent contributors to psychology. Vol. 1. A bibliography of primary references. Vol. 2. A bibliography of secondary references.* – A more recent bibliography is accessible at the *Max Planck Institute for the History of Science*, Berlin, and contains 589 entries. However, it contains some double entries, reprints, and only some of the existing translations: <http://vlp.mpiwg-berlin.mpg.de/>

Internet Resources

An increasing number of publications are available on the internet; however, they are mostly simple scans with a copy function for whole pages only and also lack an internal search function necessary for scientific study:

(1) *Max Planck Institute for the History of Science*, Berlin: <http://vlp.mpiwg-berlin.mpg.de/>

A growing number of scanned books and essays is available, including the *Grundzüge* (1874, and later editions) as well as several volumes of the *Völkerpsychologie*.

(2) *The Internet Archive* <https://archive.org/advancedsearch.php?q=Wilhelm%20Wundt>

Several scans, including volumes of *Völkerpsychologie*, in high quality.

(3) *Institute of Psychology, University of Leipzig* <http://www.uni-leipzig.de/~psycho/wundt/chapters/wundt.htm>

Digital version: *Erlebtes und Erkanntes* (1920b), *Logik* (Volume 3, 4th ed., 1921), as well as some essays and articles.

(4) *Gutenberg Project* <http://gutenberg.spiegel.de/autor/wilhelm-maximilian-wundt-654> *Erlebtes und Erkanntes* (1920b), digital version with optimal copy and search functions.

(5) *Google Scholar, German and English*, <https://scholar.google.de> <https://scholar.google.com/> Provides many references to Wundt's work and a few original publications, some of which are open access. The reprints, as cited in the bibliography of English translations (cf. 3. 1. 10), are based on earlier editions and do not represent the mature stages of Wundt's work.

Wundt's Personal Library

The majority of Wundt's personal library containing about 17,000 catalog entries (Takasuma, 2001), i.e. about two thirds of his library in Grossbothen, is located at Tohoku University in Sendai, Japan (<http://www.library.tohoku.ac.jp/en/collections/>). The remaining portion was later acquired by the libraries in Leipzig (Institute of Psychology or University Library), while a small number of books remains in family ownership (cf. the overview of the Wundt estate, Fahrenberg, 2016c). The *Max Planck Institute for the History of Science* catalog of *Wundt's Personal Library* is incomplete with only 575 entries.

Selected Publications

The following tables contain Wundt's essential book publications and essays as well as several significant speeches. Wundt's contributions to *Philosophical Studies* and *Psychological Studies*, two series of publications from Leipzig, are more detailed in some cases in comparison to the discussion of these issues in his books. Furthermore, many of these texts were published slightly revised: *Essays* (1885, 2. reprinted in 1906), *Reden und Aufsätze* (1913b, 2nd edition, 1914) and *Kleine Schriften* (Volume 1, 1910; Volume 2, 1911; and Volume 3, 1921).

The majority of quotations given in the following chapters are taken from the final, that is, last revised edition of Wundt's works.

3. 1. 9 Eminent Books, Essays, and Speeches – A Selection

Books

First Edition	Title
1856	Untersuchungen über das Verhalten der Nerven in entzündeten und degenerierten Organen. (Dissertation).
1858	Die Lehre von der Muskelbewegung.
1862	Beiträge zur Theorie der Sinneswahrnehmung.
1863	* Vorlesungen über die Menschen- und Thierseele (2 Bände). 2. bis 7. Aufl., 1892-1922 Vorlesungen über die Menschen- und Thierseele Wilhelm Wundt. [Repr. eingel. u. mit Materialien zur Rezeptionsgeschichte von W. Nitsche] (1863/1990)
1865	Lehrbuch der Physiologie des Menschen (2 Bände). 2. bis 4. Aufl., 1868-1878
1866	Die physikalischen Axiome und ihre Beziehung zum Kausalprinzip. Ein Kapitel aus einer Philosophie der Naturwissenschaften (2. Aufl. 1910. Die Prinzipien der mechanischen Naturlehre.)
1867	Handbuch der medizinischen Physik.
1874	* Grundzüge der physiologischen Psychologie (1 Band). 2. bis 4. Aufl. 1887-1893 (2 Bände) 5. bis 6. Aufl. 1902-1903, 1908-1911. (3 Bände) 7. unveränderte Aufl. 1923
1880-1883	* Logik : eine Untersuchung der Prinzipien der Erkenntnis und der Methoden wissenschaftlicher Forschung (2 Bände). 2. Aufl. 1893-1895. 3. Aufl. 1906-1908. (3 Bände) 4. Aufl. 1919-1921. 5. Aufl. Nachdruck 1924
1885	Essays (12 Arbeiten). 2. erweiterte Aufl. 1906
1886	* Ethik . Eine Untersuchung der Tatsachen und Gesetze des sittlichen Lebens 2. Aufl. (2 Bände) 1892. 3. Aufl. (2 Bände) 1903. 4. Aufl. 1912 (3 Bände) 5- Aufl. 1923-1924
1889	* System der Philosophie. 2. Aufl. 1897 3. Aufl. (2 Bände) 1907, 4. Aufl. 1919
1892	Hypnotismus und Suggestion.
1896	* Grundriss der Psychologie. 2. bis 15. Aufl. 1897-1922

1900-1920	*Völkerpsychologie. Eine Untersuchung der Entwicklungsgesetze von Sprache, Mythos und Sitte. Band 1: Die Sprache, Erster Teil. (1900) Band 2: Die Sprache, Zweiter Teil. (1900) Band 3: Die Kunst. (1905) Band 4: Mythos und Religion, Erster Teil. (1905) Band 5: Mythos und Religion, Zweiter Teil. (1906) Band 6: Mythos und Religion, Dritter Teil. (1909) Band 7: Die Gesellschaft, Erster Teil. (1900) Band 8: Die Gesellschaft, Zweiter Teil. (1917) Band 9: Das Recht. 1918. (1918) Band 10: Kultur und Geschichte. (1920)
1901	Einleitung in die Philosophie 2. bis 9. Aufl. 1902-1922
1911	Einführung in die Psychologie 2.-4. Aufl. 1913-1918
1911	Probleme der Völkerpsychologie (6 Arbeiten) 2. Aufl. (hrsg. von M. Wundt) 1921
1912	Elemente der Völkerpsychologie. Grundlinien einer psychologischen Entwicklungsgeschichte der Menschheit. 2. Aufl. 1913
1913	Reden und Aufsätze (8 Arbeiten) 2. Aufl. 1913
1913	Die Psychologie im Kampf ums Dasein.
1913	Kleine Schriften: Band 1 (1910), Band 2 (1911), Band 3 (1921).
1914	Sinnliche und übersinnliche Welt. 2. Aufl. 1923
1917	Leibniz. Zu seinem zweihundertjährigen Todestag 14. November 1916
1920	Erlebtes und Erkanntes. 2. Aufl. 1921

Note: * Abbreviated titles that are often cited given in bold font.

More detailed information on revised editions as well as reprints, especially of individual volumes of the *Völkerpsychologie*, can be found in the bibliography of the MPI History of Sciences Berlin at <http://vlp.mpiwg-berlin.mpg.de/> (see also, Araujo's listing, 2016, pp. XIX-XXII).

Articles and Essays

Year	Title
1867	Neuere Leistungen auf dem Gebiete der physiologischen Psychologie. Vierteljahrsschrift für Psychiatrie, 1, 23-56.
1869	Über die Entstehung räumlicher Gesichtswahrnehmungen. Philosophische Monatshefte, 3, 225-247.
1883	Über psychologische Methoden. Philosophische Studien, 1, 1-38.
1883	Über die Messung psychischer Vorgänge. Philosophische Studien, 1, 251-260, 463-471.
1883	Zur Lehre vom Willen. Philosophische Studien, 1, 337-378.
1885	Zur Kritik des Seelenbegriffs. Philosophische Studien, 2, 483-494.
1885	Die Therpsychologie. In Essays (S. 182-198). Leipzig: Engelmann.
1885	Die Sprache und das Denken. In Essays (S. 244-285). Leipzig: Engelmann.
1888	Über Ziele und Wege der Völkerpsychologie. Philosophische Studien, 4, 1-27.
1888	Selbstbeobachtung und innere Wahrnehmung. Philosophische Studien, 4, 292-309.
1889	Biologische Probleme. Philosophische Studien, 5, 327-380.
1889	Über die Einteilung der Wissenschaften. Philosophische Studien, 5, 1-55.
1891	Zur Frage der Localisation der Grosshirnfunctionen. Philosophische Studien, 6, 1-25.
1891	Zur Lehre von den Gemüthsbewegungen. Philosophische Studien, 6, 335-393.
1892	Auch ein Schlusswort. Philosophische Studien, 7, 633-636.
1892	Was soll uns Kant nicht sein? Philosophische Studien, 7, 1-49.
1894	Über psychische Kausalität und das Prinzip des psycho-physischen Parallelismus. Philosophische Studien, 10, 1-124.
1896	Über die Definition der Psychologie. Philosophische Studien, 12, 9-66.
1896	Über naiven und kritischen Realismus. Erster Artikel. Philosophische Studien, 12, 307-408.
1898	Über naiven und kritischen Realismus. Zweiter Artikel. Philosophische Studien, 13, 1-105.
1898	Über naiven und kritischen Realismus. Dritter Artikel. II. Der Empirio-kritizismus (Schluss). Philosophische Studien, 13, 323-433.
1903	Naturwissenschaft und Psychologie. Sonderausgabe der Schlussbetrachtungen zur fünften Auflage der physiologischen Psychologie. Leipzig: Engelmann.
1904	Über empirische und metaphysische Psychologie. Archiv für die gesamte Psychologie, 2, 333-361.
1907	Über Ausfrageexperimente und über die Methoden zur Psychologie des Denkens. Psychologische Studien, 3, 301-360.
1908	Kritische Nachlese zur Ausfragemethode. Archiv für die gesamte Psychologie, 11, 445-459.
1909	Über reine und angewandte Psychologie. Psychologische Studien 5, 1-47.
1909	Das Institut für experimentelle Psychologie. In Universität Leipzig (Ed.), Festschrift zur Feier des 500-jährigen Bestehens der Universität Leipzig (S. 118-133). Leipzig: Hirzel.
1910	Psychologismus und Logizismus. Kleine Schriften. Band 1 (S. 511-634). Leipzig: Engelmann.

1913	Die Psychologie im Beginn des zwanzigsten Jahrhunderts. In: Reden und Aufsätze (S. 163-231). Leipzig: Kröner.
1916	Völkerpsychologie und Entwicklungspsychologie. Psychologische Studien, 10, 189-238.

Note: An Index (Persons, Subjects) was provided by Lindau (1904).

Speeches

Year	Title
1874	Über die Aufgabe der Philosophie in der Gegenwart. Rede gehalten zum Antritt des öffentlichen Lehramts der Philosophie an der Hochschule in Zürich am 31. Oktober 1874. Philosophische Monatshefte, 11, 65-68.
1875	Über den Einfluss der Philosophie auf die Einzelwissenschaften. Akademische Antrittsrede gehalten zu Leipzig am 20. November 1875. Leipzig: Engelmann, 1876.
1887	Zur Erinnerung an Gustav Theodor Fechner: Worte, gesprochen an seinem Sarge am 21. November 1887. Leipzig: Breitkopf Härtel.
1889	Über den Zusammenhang der Philosophie mit der Zeitgeschichte. Eine Zentenarbetrachtung. Rede des antretenden Rektors Dr. phil., jur. et med. Wilhelm Wundt. In: Franz Häuser (Hrsg.). Die Leipziger Rektoratsreden 1871-1933. Band I: Die Jahre 1871-1905 (S. 479-498). Berlin: de Gruyter.
1902	Gottfried Wilhelm Leibniz. Akademischer Vortrag gehalten in Anwesenheit Seiner Majestät des Königs.
1913	Gustav Theodor Fechner. Rede zur Feier seines hundertjährigen Geburtstages. In: W. Wundt. Reden und Aufsätze (S. 254-343). Leipzig: Kröner.
1917	Leibniz zu seinem zweihundertjährigen Todestag. Leipzig: Kröner.

3. 1. 10 Translations

Translations for a few selected publications exist in several languages, including French, Italian, Russian, Spanish, but apparently not for any of Wundt's major works. This is true also of English translations.

In English

There are only two original publications authored by Wundt in English:

Central Innervation and Consciousness. Mind 1876, 1, 161-178.

Philosophy in Germany. Mind, 1877, 2, 493-518 (a review per invitation by the journal editors).

Translated Books

Lectures on human and animal psychology

Translated from the 2nd German ed. by J. E. Creighton & E. B. Titchener.

London: S. Sonnenschein & Co.; New York, Macmillan & Co., 1894 (2nd ed. 1896, 3rd ed 1901).

Principles of physiological psychology

Translated from the 5th German ed. by E. B. Titchener. (Foreword 1874; major parts from Volume I only)

London: Sonnenschein; New York: Macmillan, 1904 (2nd ed. 1910).

Outlines of psychology

Translated, with the cooperation of the author, by Ch. H. Judd.

New York: G. E. Stechert, 1897. (Second revised English edition from the fourth revised German edition, 1902).

Ethics. An investigation of the facts and laws of the moral life. The principles of morality and the departments of the moral life. Ethical Systems

Translated from the second German edition, 1892, by E. B. Titchener, J. H. Gulliver and M. F. Washburn.

London: Swan Sonnenschein & Co., New York: MacMillan, 1897-1901 (2nd. ed. 1902).

An Introduction to Psychology

Translated from the second German edition by R. Pintner.

London: George Allen & Co., 1912.

Elements of folk psychology; outlines of a psychological history of the development of mankind.

Authorized translation by E. L. Schaub.

London: G. Allen & Unwin Ltd.; New York: Macmillan, 1916.

Language of gestures. Approaches to Semiotics

With an introduction by A. L. Blumenthal and additional essays by G. H. Mead and K. Bühler.

The Hague: Mouton, Berlin: De Gruyter, 1973.

Psychology's struggle for existence

Translated from the second edition, 1913. by J. T. Lamiell.
(History of Psychology, 2013, 16, 197-211).

Note: Based on the catalogs of the Library of Congress, Washington, and the British Library, London, as well as the bibliography provided by Kim (2016), Araujo (2016), and PsycInfo.

Thus, English translations only exist for two volumes of Wundt's main works, namely, *Grundzüge der psychologischen Physiologie* (Chapters 1 to 6 only) and *Ethik*. In addition, there are book translations, which may be considered to give introductory texts: *Vorlesungen über die Menschen- und Tierseele*, *Grundriss der Psychologie* and *Elemente der Völkerpsychologie*. None of these books represents the final status of the continuous research, that is, the mature level of Wundt's complete work. – A translation for the three-volume *Logik und Wissenschaftslehre* does not exist at all, which means, that there is no systematic access to Wundt's elaborated teaching about relations between empirical psychology, epistemology and methodology. – In fact, mainly introductory texts addressed to a wider audience were translated into the English language, and *none* of Wundt's main works, based on the last and mature edition. It should be noted that until at least the turn of the century in 1900, German psychologists knew for good reasons that foreigners, e.g. from the US, with a special interest in psychology and philosophy had to find themselves ready to learn German and, eventually, to attend a German university for academic studies and research – as it sometimes seems to be the other way around today.

Titchener's Failure

Titchener, who came to Leipzig in 1890 wrote extensively about his efforts, which began as early as 1887, to translate Wundt's *Grundzüge* despite the difficult content and language style (cf. Foreword, 1904, 2nd ed. 1910). The resulting edition contained 26 pages from the introduction (1874 version) and only the six chapters on neurology and neurophysiology in the first volume of the 5th edition (1902), i.e. only 360 of the 553 pages of the *first* volume. Titchener omitted the following chapters on the *psychology of sensations* without further justification, as well as the second and third volumes entirely. He was a doctoral student of Wundt and had tried to translate the basic features in three attempts, but ultimately failed.

"I fear that – apart from my rather clearly bought experience, which should have profited me something – the present translation is the worst of the three." ... "Wundt's style has often, of late years, been termed diffuse and obscure. I should not care to call it either of these things; but I am sure that it is difficult. It has, perhaps, in a somewhat unusual degree, the typical characteristics of scientific German; the carelessness of verbal repetitions, the long and involved sentences, the lapses into colloquialism, and what not. It has, besides, two special difficulties. The one is intrinsic: Wundt, if I read him aright, has always had the habit of thinking two or three things at once, of carrying on certain secondary trains of thought while he develops his central idea; and the habit has grown upon him. The consequence is that his use of connecting particles, of parentheses, of echo clauses, is now always complex, and at times extraordinarily complex. The reader who opens the *Physiologische Psychologie* at haphazard, and runs through a paragraph or two, will think this statement exaggerated. If he will try not to understand, but to translate, and to translate not a page, but a chapter, its truth will be borne in upon him. ... The second special difficulty in Wundt's style has also grown with the years; it is his increasing tendency to clothe his ideas in conceptual garb, to write in a sort of shorthand of abstractions. I have never thought him, for this or for the other reason, obscure; the meaning is always there, and can be found for the searching. But there are many and many passages where a half-way literal English rendering would be unintelligible; where one is forced, in translating, to be concrete without losing generality; and in cases like this the translator's lot is not a happy one" (Translator's Preface, 2nd ed. 1910, pp. X-XI).

This foreword will undoubtedly have influenced the reception of Wundt's work in Anglo-American psychology. Titchener was one of Wundt's doctoral students and judged his textbook to be exceptionally difficult and hardly translatable since he himself failed in his attempt to translate it. Titchener's publication cannot even be regarded as a torso of the *Grundzüge* since Wundt's experimental research and methodological principles are completely lacking.

In conclusion, Wundt's original work has hardly been accessible to Anglo-American audiences. Since Wundt's sophisticated style requires a very good knowledge of German, his work remains largely inaccessible to most Anglo-American psychologists. Thus, Wundt's reception is impaired by misunderstandings, stereotypes, and superficial judgements. Even William James did not find adequate access to Wundt. Granville Stanley Hall, Edward Titchener, Edward Boring, and many later authors are responsible for serious misunderstandings. Chapter 4. 8 contains a selective review of the highly problematic Anglo-American reception of Wundt's accomplishments and originality.

There are four notable exceptions. Since 1970, Arthur L. Blumenthal in the United States and Kurt Danziger in Canada published articles aimed at elucidating some of the major aspects of Wundt's psychology and epistemology. Alan Kim's (2016) *Stanford Encyclopaedia of Philosophy* article on Wilhelm Wundt describes Wundt's work predominantly from a philosophical point of view. Thus far, the only book on Wundt's heritage was published in 2016 by Saulo Araujo from

Brazil. The book is entitled *Wundt and the Philosophical Foundation of Psychology: A Reappraisal* (cf. Chapter 3. 9) and provides a concise analysis of his work.

Wundt developed his scientific terminology about 150 years ago, and since then terminology in the field of psychology has changed in many ways. New terms have been coined and the meanings of some terms have changed. Wundt's terminology may cause misunderstandings, since there are still no explicit and operational definitions for most of the psychological concepts he used. Contextual information is required for a more detailed understanding, such as the theoretical reference system, methodological details, and often the individual author who coined or reinterpreted a certain term as well.

Schaub, who translated *Elemente der Völkerpsychologie*, wrote in the Translator's Preface: "The trials of the translator have been recounted too often any longer to require detailed mention. President G. Stanley Hall has suggested that the German proclivity to the use of long, involved sentences, loaded with qualifying words and phrases, and with compounds and supplementary clauses of every description, may perhaps, be said to have the merit of rendering language somewhat correspondent with the actual course of thought. The significance of this statement can be appreciated by no one quite so keenly as by a translator, for whom the very fact which President Hall mentions causes many German sentences to be objects of despair. In the present instance, the endeavour has been to reproduce as faithfully as possible both the meaning and the spirit of the original, while yet taking such liberties as seemed necessary either to clarify certain passages or to avoid any serious offence to the English language. In a number of cases, no absolutely satisfactory equivalent of the German term seemed available" (1916, p. IX-X). Schaub's examples were the very expression of "folk psychology" (*Völkerpsychologie*) and the distinction between *Märchen, Sage, Legende and Mythos* (as Wundt had always attached great significance to this distinction). "In this instance again, therefore, it seemed best to give to the author's own terms a preference over words which, while more familiar to the English reader, are less suited to convey the precise meaning intended" (p. X-XI).

Danziger (2001a) pointed out the pitfalls of translation. As an example, he refers to the German term "Trieb" used by both Wundt and Freud. However, in Wundt's work it has been translated as "impulse," and in Freud's work as "instinct." "One wonders what direction the English-language secondary literature on these authors would have taken had the translators' choices been reversed" (S. 91).

Critical evaluations of this kind hardly motivate the use of existing early translations or the vocabulary used there. Side views, however, were taken here in the relevant publications by Araujo, Blumenthal, Danziger, and Kim. In the course of translation and revision, it became obvious that literal translations often do not suffice to represent the original meaning in every case; in some instances, an equivalent English term is apparently not available. On the other hand, some basic terms that are ubiquitous nowadays are absent from Wundt's writings. Without knowing about the essential connotations, categorical aspects, and theoretical positions, Wundt's terminology could be misleading.

The dictionaries used here include:

American Psychological Association (2015). APA dictionary of psychology (2nd ed.).

Haas (2003). Wörterbuch der Psychologie und Psychiatrie. Dictionary of Psychology and Psychiatry, Volume 1-2 (2nd ed.).

Wirtz et al. (2013). Dorsch. Lexikon der Psychologie (16. Auflage).

Ritter et al. (Hrsg.). (1971–2007). Historisches Wörterbuch der Philosophie (13 Bände).

Concise Oxford Dictionary (2012, 12th ed.). Oxford: Oxford University.

Dict.cc Deutsch-Englisch-Wörterbuch <https://www.dict.cc/>

Translation in Other Languages

A comprehensive overview of foreign language translations does not exist. Eleonore Wundt's first bibliography, which also listed foreign-language translations, offers an initial approach. It is noteworthy that *Periodicals Index Online* (PIO) contains about as many references and *reviews* of Wundt's publications in other languages as it does in German. The Wundt articles in the French, Italian, and Spanish versions of Wikipedia, however, consist mainly of abbreviated variants of the articles on the English version of Wikipedia (before its revision in 2017). However, a few bibliographical references are occasionally included. – Ferrari, Robinson and Yasnitsky (2010) point out that more of Wundt's writings (including his cultural and philosophical works) were translated into Russian than into any other language.

In *Retracing the footsteps of Wundt*, Wong (2009) pointed out the problematic translations of Wundt's works in English as compared to the Russian and Spanish translations. "One of the most interesting sections of Eleonore Wundt's catalogue of her father's academic works is the collected record of Wundt's translated works. According to Eleonore, as of 1927, 17 items of Wundt's works were translated into Russian, 11 items into Spanish, and 7 items into English. A closer examination also reveals that the content of the items selected for translation varied as a function of language. The items translated into Russian are the most diverse in terms of their content. They encompass general and experimental psychology, *Völkerpsychologie*, and philosophy. Those translated into Spanish are mainly philosophical works. Of the seven items selected for the translation into English, four of them fall into the category of general and experimental psychology. It is not surprising to learn that Wundt's

works were most comprehensively translated into Russian. During the late 19th and early 20th centuries, the Russian academic circle was well informed about the progress of research in Germany. More noteworthy is the limited number of translations into English, a factor that could reasonably explain the relatively restricted understanding of Wundt in the English-speaking world. According to his daughter, only the following seven items were translated into English by 1927: (1) *Lectures on the psychology of man and animals* (1894), (2) *Ethics* (1897), (3) *Outlines of psychology* (1897), (4) *Principles of physiological psychology* (1904), (5) *An introduction to psychology* (1912), (6) *On the real war* (1915), and (7) *Elements of folk psychology (Völkerpsychologie)* (1916).” (p. 233).

An up-to-date bibliography does not exist. Preliminary research indicates that there are a number of catalog entries referring to Wilhelm Wundt at the following institutions: Bibliothèque nationale de France, Paris; Catálogo de la Biblioteca Nacional de España, Madrid; Biblioteca nazionale centrale di Roma; Russian National Library, St Petersburg; National Library of China, Beijing, and the Japanese University Libraries. The library catalogs at the *British Library*, London, and the *Library of Congress*, Washington, also have a few entries for non-English, e.g. Chinese and Japanese, sources.

3.11 Glossary

The glossary contains a selection of basic terms in German and English

Erkenntnistheorie	epistemology
Wissenschaftstheorie	theory of science (natural and mental sciences)
Methodenlehre	methodology
Geisteswissenschaften	mental sciences (humanities)
Naturwissenschaften	natural sciences
Metaphysik, Ontologie	metaphysics, ontology
Metapsychologie, Metascience	metapsychology, metascience
Sein	world of being
Kategorienlehre	system of categories
Prinzipienlehre	system of principles
Erkenntnistheoretisches Prinzip	epistemic principle
Philosophie des Geistes	philosophy of mind
Psychologische Entwicklungstheorie des Geistes (aufgrund der Kulturpsychologie)	psychological developmental theory of mind (based on cultural psychology)
Völkerpsychologie	cultural psychology
Geistige Gemeinschaft, geistige Welt	mental community, intellectual world
Geistige Werke	cultural, intellectual products (works, phenomena), achievements, accomplishments
Moral, Sittlichkeit	morality
Ethik	ethics (philosophical reflections on the principles of morality)
Substantialität, geistige Substanz	substantiality, mental (metaphysical) substance
Aktualität, Prozesshaftigkeit, Prozesstheorie	actuality, process, flow of events, flowing process, theorie of processes (processing)
Geist – Materie	mind – matter
Kausalprinzip, Kausalerklärung	principle of cause, law of cause and effect, concept of causality, causal explanation
(Natur-)Kausalität	natural causality
Psychische Kausalität	psychical (psychological) causality
Zweckprinzip, Zweckhaftigkeit, Teleologie, Mittel und Ziele	principle of purpose, concept of purposive(ness) , teleology, means and ends,
Prinzip des zureichenden Grundes	principle of sufficient reason
Intentionalität, Bezogenheit	intentionality (relatedness)
Seele, unsterbliche Seele	soul, immortal (transcendent) soul (spirit)
Geist, geistig (kategorial)	mind, mental (categorial)
Psyche, Psychisches (Seelisches), (erfahrbar)	psyche, psychical (experiential)
Leib-Seele-Problem	mind-body-problem
Psychophysischer Parallelismus	psychophysical parallelism
Psychophysische Einheit	psychophysical unity
Bezugssystem	frame of reference

Betrachtungsweise, Perspektive, Perspektivität	point of view, perspective, perspectivism
Bewusstsein, Bewusstseinsprozess, Bewusstseinsinhalt	consciousness, process (flow, stream) of consciousness, content of consciousness
Verlauf (zeitlich, dynamisch)	time (dynamic) course
Aktuell unbemerkte Prozesse	actually unnoticed (preconscious) processes
Unbewusste Prozesse	unconscious processes
Unbewusste Schlüsse (Inferenzen)	unconscious (logical) inferences
Denken, Fühlen, Wollen	thinking, feeling, wanting (willing); knowledge, feeling, desire; cognition, emotion, volition
Vorstellung, Vorstellungsinhalt	(psychical, mental, cognitive) representation, representational content
räumliche, visuelle, zeitliche Vorstellung	spatial, visual, temporal representation
Sinneseindruck, Empfindung, Sinneseinbildung (auditive, räumliche, taktile, visuelle), zeitliche, aktuelle oder reproduzierte, Vorstellung (Idee, Wahrnehmung, Synthese, Gefüge)	sensory impression, sensation, sensory representation (auditory, spatial, tactile, visual sensation), temporal, actual or reproduced representation (perception, idea, synthesis, compound)
Denken	thinking (conceptual), logical reasoning
Begriff	concept
Auffassung, Anschauung, Idee	apprehension, intuition, idea
Wahrnehmung	perception (representation)
Gefühl und Affekt	feeling and affect
Verhalten	instinctual or voluntary activities (term "behavior" not used by Wundt)
Wille (Willenstätigkeit), Motivation	voluntary (intentional) activity, volition, will, wanting, willful activity, motivation
Motiv	motive
Instinkt, Trieb, Triebhandlung	instinct, drive, impulsive action
Handlung, Tätigkeit	action, activity
Willkürhandlung, Wahlhandlung	voluntary action, selective (choice) action
Intellektualismus – Voluntarismus	intellectualism – voluntarism
Metaphysischer Voluntarismus, psychologischer Voluntarismus	metaphysical voluntarism, psychological voluntarism
Kritischer Realismus	critical realism
Element, Elementenpsychologie	element, elementaristic psychology, elementarism
Gefüge	compound, aggregate
Verbindung	(inter)connection, relation(ship)
Gesetz, Gesetzmässigkeit	law, law-like statement
Assoziation, Assoziationismus	association, associationism
Apperzeption, apperzeptive Verbindung (Agglutination, Vergleich, Verschmelzung, Verschiebung, Verdichtung), Synthese	apperception, apperceptive connection (agglutination, comparison, fusion, displacement, condensation) synthesis
Prinzipienlehre (Meta-Relationen)	system of principles (laws of relation)
Prinzip der (reinen) Aktualität	principle of (pure) actuality
Prinzip der psychischen Kausalität	principle of mental causality
Prinzip der schöpferischen Synthese	principle of creative synthesis (emergence, emergent properties)
Prinzip der Heterogonie der Zwecke	principle of the heterogonitiy of purposes (intended and unintended consequences of actions)
Kontextprinzip	principle of context (relational analysis)
Kontrastprinzip	principle of contrast

3. 2 Sensory Physiology and Sensory Psychology

During the Heidelberg years, Wundt published 10 articles on physiology and neurophysiology, including on reflex activity, muscle physiology, eye movements, neural transmissions, and the effects of curare, as well as the *Lehrbuch der Physiologie des Menschen* (Textbook on human physiology, 1865) and a *Handbuch der Medizinischen Physik* (Handbook of Medical Physics, 1867a). Wundt's research on the physiology of reflexes was well-known even outside Germany and was quoted, for example, by Sherrington (1911).

Lehrbuch der Physiologie des Menschen (Textbook on human physiology) (1st ed. 1865, 4th ed. 1878, 768 pages)

General Physiology

Composition and structure of the organs

Functions of elementary organisms

Functions of composite organisms

Special Physiology

First section: Physiology of nutrition

Second section: Physiology related to the external world (exteroception and movement)

Functions of neural elements and muscle fibres

The sensory impressions

Muscle movements

Functions of nerves and nervous centers

Third section: Physiology of procreation and development

Note: The chapter on perception contains 118 pages, while the section on brain functions contains 14 pages. The only psychological topics to which Wundt refers are psychophysics (cf. Wundt's *Neuere Leistungen auf dem Gebiete der physiologischen Psychologie*) ("Recent accomplishments in the field of physiological psychology," 1867b) and *Über die Entstehung räumlicher Gesichtswahrnehmung* (On the origins of spatial perception, 1869).

After his initial studies on the physiology of reflex actions (motor and autonomic NS) and sensory functions, the psychology of perception became an attractive second field in Wundt's research activities. The topics of his experimental studies included spatial and visual perception, optical illusions, the phenomenon of gloss, and visual illusions. In this context, he also described a visual illusion now known as the "Wundt illusion." It is a variant of the Hering illusion.

Beiträge zur Theorie der Sinneswahrnehmung (Contributions to the Theory of Sensory Perception, 1862) combines several earlier works and Wundt expressly states the reasons for his change of perspective. Mere sensory psychology would not suffice to describe the process of perception adequately; psychological principles have to be considered as well. On the front page he quoted Leibniz: "Nihil es in intellectu quod non fuerit in sensu, nisi intellectu ipse" ("Nothing is in the intellect that was not first in the senses, except the intellect itself," *Nouveaux essais*, 1765). With his ironic addendum, Leibniz rejected John Locke's plain sensualism (empirism), because the intellect is not an empty slate. Logic, categories, and laws of reasoning are not yet included in the sensory impressions.

Beiträge zur Theorie der Sinneswahrnehmung (Contributions to the theory of sensory perception)

(1st ed. 1862, 451 pages, the essays had been published before separately in the *Zeitschrift für rationelle Medizin* from 1858 to 1862)

Preface

Introduction: On psychological methods

On the sense of feelings, with special regard to spatial perception

On the history of the theory of visual perception

On seeing with one eye / On seeing with two eyes

On some special phenomena of seeing with two eyes

On the psychical process of perception

The process of spatial perception or contrast and competition of visual fields cannot be explained merely by the elementary functions of the sensory apparatus, but such research has to be complemented by psychological observations and experiments. Wundt was inclined to understand spatial perception as a product of sensory impressions that take place "unconsciously and

logically” in the subject. On the other hand, he emphasized the difference between such inferences and the common logical deductions because something qualitatively new emerges, namely, the spatial form.

The example of *size constancy* might help to illustrate the controversy about “unconscious conclusions.” Even from greater distance, a human figure is recognized as a human being of normal size and not as a pygmy or dwarf. Thus, in the sensory apparatus, comparison and logical conclusion take place, which in principle were considered to be *conscious* operations during Wundt’s time. However, Helmholtz as well as Wundt suggested that conclusions of this kind are “unconscious” in a certain way. Presumably, the two researchers influenced each other in this regard. However, Wundt relativized his considerations on “unconscious” conclusions with respect to the “theory of unconscious mental processes” already in his *Grundzüge* (1874). Nowadays, one speaks of *automatic inferences*, which describe unnoticed processes without access to a conscious representation.

“When I tried to deal with the more complex problems of psychology, starting from the theory of sensory perception, I could not avoid the impression that there is a gap between both fields that urgently has to be filled, because the advanced fields of research, which, thanks to physiology, have advanced to an experimental treatment, were indicating in many ways to relations of logical thinking with the more complicated conscious processes. Especially since I had set myself the task – in the first edition of *Physiological Psychology* – to eliminate the concept of “unconscious conclusions” – which basically hides the real solution behind a mere word – and replace it by real, thus consistently detectable processes, the contrast that had emerged between the different fields of physiology became more and more unbearable to me. ... Here I recognized that the balancing between the so-called ‘higher’ and the ‘lower’ psychology is one of the most important tasks of the future.” (*Erlebtes und Erkanntes*, 1920, p. 200).

In this context, Wundt formulated the *principle of creative synthesis* (*creative results*) (1863, I, pp. 435), a basic principle knowledge to which he clung in all other fields of psychology and beyond. Creative synthesis is almost synonymous to the term “emergence principle” used in current systems theory. However, it is noteworthy that Wundt referred to active, creative achievements ranging from simple sensory activity to intellectual and cultural products as well as values. He established this principle long before the concept of “supra-summation” was used by Gestalt psychologists and validated it through empirical research, making it a central epistemological principle in psychology and in the developmental theory of the mind.

Given the fundamental importance of this epistemological principle with respect to Wundt changing his perspective from sensory *physiology* to sensory *psychology*, as well as its importance within the context of his entire work, this principle will be elaborated here by two quotations from Wundt’s later writings: “Every perception can be broken down into elementary impressions. However, a perception is never just the sum of these impressions, but rather something new is created through their connection, which contains special qualities that were not contained in the impressions themselves. Thus, we create the mental representation of a spatial form from a multitude of impressions of light. ... By their interactions, the psychical elements create objective structures that have new qualitative features and values not yet contained in their elements.” (*Über psychische Kausalität*, 1894, pp. 112-124). “The principle of creative synthesis rules all mental formations from sensory perception up to the highest intellectual processes. Every higher mental structure shows qualities which, once attained, can be understood by the qualities of their elements, but nevertheless should not be regarded as the mere sum of the qualities of their elements” (*Grundzüge*, 1902-1903, 3, p. 321, 375, 778).

Reception and Comment

Edmund König (1901), Wundt’s first biographer, called the *Beiträge* “the manifesto of experimental psychology,” because they are considered to be a step towards an independent psychology oriented towards experimental investigation in the general field of psychology, even beyond Fechner’s “psychophysics.” Wundt’s approach to empirical psychology was derived from his work on sensory physiology, which showed him that perception has certain regularities that cannot be interpreted within the conceptual frame of contemporary physiology, but which require psychological explanations. From this postulate, questions arise about the adequate research methodology and the definition of psychology. Wundt’s defining of the concept of “creative synthesis” served as an introduction to his epistemological and methodological *system of principles* that followed.

The topic of unconscious conclusions was preeminent during Wundt’s time; however, its discussion was complicated due to the lack of explicit definitions, terminological difficulties, and misunderstandings. Philosophers such as Leibniz, Kant, Carus, Fechner, and Eduard von Hartmann had already promoted conceptions like those of the “the obscure field of ideas in man” or the idea of the “unconscious” for some time. On the other hand, for a neurophysiologist like Wundt it had to be obvious that only a relatively small portion of neuronal activity can be experienced consciously. Perhaps Wundt’s considerations in this early stage were already influenced by his increasingly distinct rejection of the popular and diffuse concepts of the “unconscious.” Discourse on that topic is instructive with regard to the history of ideas and as a controversy on psychological and physiological perspectives in sensory perception (Araujo, 2010, 2016; Fahrenberg, 2015a, pp. 388-394; Richards, 1980).

A survey of Wundt's writings on sensory psychology and the contemporary research in this field is not intended here. Wundt's very detailed views on this topic can be found in the sixth edition of the *Grundzüge* (1908-1911, vol. 1 - 3) in seven chapters with more than 1,500 pages: Structure and functions of sensory organs, sensations and their intensity, psychophysics, and sensory representations.

3.3 Neuropsychology and Psychophysiology

Sensory physiology serves to inform the psychologist about the relevant foundations of mental processes; however, only psychology asks adequate questions to be answered by the physiology of seeing and hearing. Wundt (1921, p. 222) supported dividing the fields into two disciplines. Mere physiological research is not sufficient to understand brain functions. The next step consists in combining physiological and psychological points of view, because "each of these fields exists for itself, insofar as neither can be reduced in any way to the other. In fact, we cannot derive the mechanics of nerve substance from the mental representation of our impressions and feelings, or, conversely, the latter from the former" (1908, I, p. 43). Wundt combines this warning against reductionism with a strategic proposal to first define psychological aspects in detail and then turn more closely to physiology (1908, I, pp. 381-382). Wundt explained his foundation of neuropsychology in the *Grundzüge der physiologischen Psychologie* (1874), and then in even greater detail from the third edition onwards, which was extended to three volumes. Estimated by the number of pages, about a quarter of the textbook (6th volume, 1908-1911) consists of basic knowledge in neuroanatomy, neurophysiology, and sensory physiology as well as Wundt's own theoretical discussion. The proportion of information on anatomy and physiology is presumably higher than in any other textbook on general psychology during Wundt's time or even nowadays.

Volume I contains an extended main section called *Von den körperlichen Grundlagen des Seelenlebens* (On the physical foundations of mental life) with chapters on the following topics:

Constructive elements of the nervous system
Physiological mechanics of nerve substance
The structural development in central organs
Pathways of nervous transmission

Chapter 6, *Physiologische Funktion der Zentralteile* (Physiological functions of the central structures) contains three sections that are of neuropsychological interest, namely, "Functions of the cerebral hemispheres," "Examples of a psychophysical analysis of complex cerebral functions," and "General principles of central functions" (1908, pp. 335-397). Wundt distinguishes four *central principles* concerning the course and function of pathways as well as *five principles* of central functions. In this respect Wundt is aligned with Meynert, Munk, Ramón y Cajal, and others. The following principles are worth mentioning here:

- principle of multiple representation:
- principle of central connection of anatomically separated functional areas:
- principle of substitution:
- principle of relative localization (1908, pp. 275-291):

There are three prominent topics in Wundt's neuropsychology:

(1) The criticism of contemporary localization theory, which should be replaced by the notion of a "multiple representation." Wundt considered the cortex to be the best examined of all brain structures due to the techniques available then. However, even Meynert's most advanced studies on brain functions would not suffice because there is no concept to explain their functional significance. Wundt opposed the "dogmas of older nerve physiology" by writing: "One could suppose that with the existence of a central element the specific content of an impression would be automatically given, or that the 'projection' of the relevant image on a central sensory plane would be sufficient to complete the act of seeing; or that "word memory" and "intelligence," in the sense in which they occur in popular psychology as unified concepts, could be localized in stable, demarcated areas of the brain. To make such suppositions is easier than to take appropriate steps vis-à-vis the aforementioned principles. However, those ideas, regardless of the fact that they do not correspond to the facts, are inadequate because they are based on a wholly untenable psychology and insufficient physiological concepts as well as on an outdated understanding of the structure of the nervous system" (p. 397).

Wundt shaped the general *principle of relative localization* by extensively discussing the contemporary state of knowledge, including methodology with special regard to Meynert's and Munk's arguments. On the level of neuropsychological research, he opposed Meynert's assumption of an association center, which he believed contaminates anatomical–physiological assumptions with psychological concepts.

(2) Wundt's rejection of the widespread assumption, which was also shared by Meynert, Hitzig, Ferrier, and Flechsig, to localize "intelligence" in the frontal cortex. Wundt suggested that, instead of examining phenomena combined into a diffuse generic term, those phenomena should be "broken down into elementary processes that can be connected to a clear and simple psychological concept, which might relate to a likewise simple corollary concept ("Korrelatbegriff") in physiology" (p. 381). The state of "attention" can be considered an elementary concept that supposes an alternation of excitatory and inhibitory processes. In contrast, it would be "a hopeless task to look for specific physical substrates of any kind for such a complex notion as 'intelligence'" (p. 382). Wundt pointed out that attempts to localize higher functions of the central nervous system should start from distinct and psychologically grounded research hypotheses since research questions cannot be raised with sufficient precision on the physiological and anatomical level. For Wundt, attention and attention control were prime examples of a desirable coordination between research in psychology and physiology.

(3) The neuropsychological conception of apperception theory. Wundt underpinned his central theory of apperception with neuropsychological modelling (from the third edition of the *Grundzüge* onwards). Thus, the hypothetical apperception center in the fronto-cortical structures would integrate sensory, cognitive, emotional, and motivational process components. Wundt's apperception theory is explained in the section on complex cerebral functions (pp. 360-385), including a "scheme of hypothetical connections of the apperception center" (p. 383, see ill. 1).

"The central sector of apperception AC is connected in a twofold system of pathways (and intermediary centers) with a centripetal system that supplies sensory excitations from the visual center, auditory center, and other sensory centers ('center' should be understood in its relative meaning), and a centrifugal system that supplies the subordinated centers with inhibiting impulses. ... Depending on whether such impulses are transmitted to the sensory or to the motor centers, either the apperception of impressions takes place or the execution of voluntary movements. In the first case, other impressions caused by external or internal stimuli are inhibited, while in the second case this also happens to the motor impulses." (p. 383). Wundt admitted that this is an analogy to elementary reflex activity and reflex inhibition. Nevertheless, his supposition is far removed from such simple explanations. The neurophysiological features of the intermediary centers were still completely unknown, and Wundt could not be more precise about the neuronal systems as corollary concepts. The CNS pathways in connection with autonomous and motor pathways and intermediate centers provide a heuristic for further research and serve as a framework for higher integrative processes, which are explained by means of a functional diagram similar to current neuropsychological modelling. The process of apperception has a neurophysiological foundation.

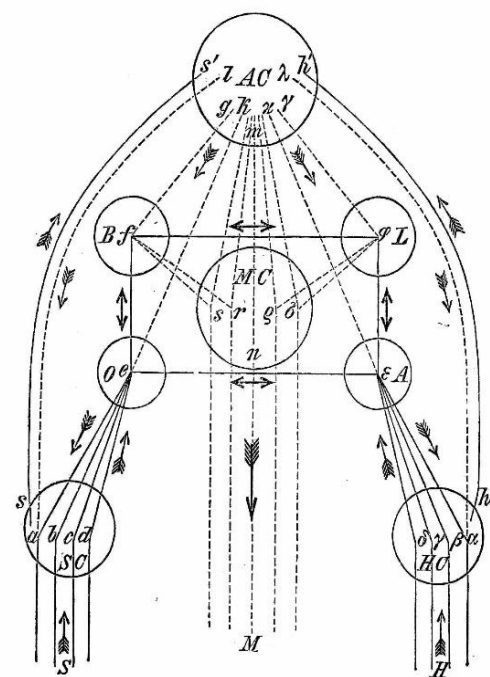


Fig. 105. Schema der hypothetischen Verbindungen des Apperceptionscentrums. SC Sehzentrum. HC Hörzentrum. S zentrale Sehnervenfasern. H ebensolche Hörnervenfasern. A, O sensorische, L, B motorische Zwischencentren. MC directes motorisches Centrum. M motorische Centrifasern. AC Apperceptionszentrum. s, s', h, h' centripetale Bahnen zu dem letzteren, l, a, g, f u. s. w. centrifugale Verbindungen desselben.

Figure 1: Apperception Center, efferent and afferent pathways, a diagrammatic representation (*Grundzüge*, III, 1908, p. 383; *Grundzüge*, III, 902, p. 324) anticipating the more recent approach in neuropsychological modelling

Wundt discussed the other connections as indicated in the scheme by referring to the process of language and speech functions, i.e. the psychological aspects and the hypothetical physiological intermediary elements of the linguistic, visual, and motor associations and apperceptions (1908, p. 385). But he emphasized that other aspects are not considered, such as the stability and direction of the associations, the permanent influences of practice and representation, and all influences (not suited for schematic illustration) that are “exerted on the associations and perceptions taking place on the psychological level by the constellation of consciousness and on the physiological level by the entire state of nervous dispositions. ... Brain physiology ... must realize that it has to ask many more questions of psychology, on whose answers the interpretation of its own findings depend ... One cannot understand the construction of a machine without knowing exactly the purpose for which it had been built. Likewise, one has to analyze the functions of an organ in order to understand it, and even more when it is more complex” (Wundt, 1913b, p. 197).

Wundt himself could not further elaborate this attempt at neuropsychological modelling at his time, but he formulated the idea of a research program about the higher integrative processes planned from a primarily psychological orientation. Current research on cognitive executive functions in the prefrontal cortex as well as on respective “emotional executive functions” and hypothetical “multimodal zones of convergence” in the functional network of the cortex and the limbic system are directed toward similar goals.

Reception of Wundt’s Neuropsychology

Wundt himself did not use the term neuropsychology, however, his emphasizing the principle of relative localization and his plea against an exclusively neurophysiological strategy of investigation into higher CNS functions are basic to modern neuropsychology. However, his contribution to this development is hardly remembered anymore, not even his early commitment to these ideas, which merit special historical attention. Other psychologists, such as Ebbinghaus, Külpe, Stumpf, or Ziehen, were obviously inclined to assume simple statements about localizations, instead of inquiring more thoroughly into the theoretical constructs available from psychology. Since Wundt, the neurosciences have developed as an interdisciplinary field of research very much in the direction that Wundt had indicated.

Neither Rohracher (1958), who was interested in brain functions, nor his graduate students mention Wundt’s contributions in the first German-language textbooks on neuropsychology (Guttman, 1972; Haider, 1971). Markowitsch (1996, 1999) includes Wundt’s scheme of the apperception center in his survey of network models, but without comment. The only exception is Breidbach (1997), who named a section in his history of brain research: “Wilhelm Wundt – Erste Konturen einer Neuropsychologie” (First contours of a neuropsychology). He pointed to Wundt’s (1974) extensive account of the neuropsychological and anatomical foundations of human behavior. It was Wundt who sought to “draw out the essence of these propositions from individual sciences for his own research program on the analysis of basic mental structures” (p. 171). Hagner (1996, p. 69) included Wundt’s diagram in his review, however, without explaining the centripetal and centrifugal systems. He also mentioned that Wundt thought that the intellectual functions, such as representations of words, thinking, and memory, were far too complicated to be easily localizable, and he also suggested that Wundt’s arguments were addressed to “enthusiastic brain anatomists” such as Flechsig (1896).

Krech (1950) made the well-known, uncompromising claim that every psychological construct should be modelled in a way that it is congruent to a neurological one. One could ask whether or not this kind of “neuro-reductionism” would have been more sophisticated if Wundt’s concept had been read beforehand. Sabat (1979) pays tribute to Wundt’s contributions to physiological psychology and neurophysiology but touches only briefly on this subject and associated perspectives. From an American perspective, Woodward (1982) tries to give a survey of Wundt’s interdisciplinary program in psychology and also mentions the misunderstandings by Titchener and James. He reproduced the scheme of the apperception center, but without commentary. The point of view held by Posner and DiGirolamo (2000) appears to be characteristic of many of the American authors. Neuropsychology appears to have begun during the 1960s in the US for these authors, with the exception of the old problem of attention, for which they refer to William James (1890), but not to Wundt (1874).

A noteworthy exception is Danziger (2001b) who attempted to reconstruct interpretation. He relied on only a few quotes, but eventually made the important neuropsychological concept more accessible than the often clumsily worded original text. Danziger discussed Wundt’s apperception theory from the point of view of “voluntary activity (willing)” and emphasized that it was a new dynamic view of apperceptive processes, because Wundt claimed a bidirectional apperceptive process in terms of the sensory impression and the motor side.

“Wundt’s model of mental functioning is that of a field in which there is always a polarity between the central part (the Blickpunkt) and the periphery (the Blickfeld), that is, between the focal point and the rest of the field. This polarization is the product of the apperceptive process, which is a fundamental active principle that is responsible for the fact that all experience is structured. Apperception, however, was for Wundt a manifestation of volition. It was the dynamic principle that gave direction and structure to experience and to movement. Apperception was a central process that operated in two directions. On the one hand, it operated on sensory content producing the complex forms of perception and ultimately of

ideation. ... But for Wundt, this was only half the story. Apperception also operated on the motor apparatus. Just as the contents of the cognitive field were structured in terms of focus and periphery, so the field of skeletal movements involved some that were apperceived and others that were peripheral at any particular time. Just as the apperception of perceptual content imposed form and direction on perceived figures, so the apperception of movements of the individual's own body imposed the selective inhibition of motor centers. In Wundt's terms, an apperceived movement constituted a volitional action. In this case, he spoke of an 'external' form of volitional activity, as contrasted with the 'internal' form, in which some ideational content is apperceived. In either case, apperception operates as a patterning principle" (pp. 109-110).

According to Ziche (1999), Wundt favored a strategic division of physiology and psychology since physiology suffered from a severe deficit as revealed by the localization controversy. In many cases, only psychology could provide the right kind of conceptual framework in which physiological research could progress. Despite uncertainties with regard to the nature of physiological foundations, psychology held a leading role, at least with respect to the most important facts about language, vision, and apperception. It is impossible to study brain functions using only physiological methods.

Wundt's multi-referential description of attention and attention control is usually ignored in modern textbooks. His apperception theory with its highly differentiated psychological concepts, and even the concept of apperception itself (in contrast to perception and the elementary processes of association), are not mentioned at all, or at best only casually. This even applies to texts on the history of neuropsychology. Wundt's approach has been to constitute the process of attention as a relatively elementary bridging concept, modelled in such a way that it enables psychologically founded questions to be asked of physiological research. For some time, there was no reception to this approach. However, two recent research programs should be mentioned here. First, the concept of the orientating response developed thoroughly by Sokolov (1963) and other authors generated a broad interest in psychophysiological research, leading to multi-parameter studies. However, there was no parallel research on volitional control of attention. Second, innovative methods in this field led to new approaches, for example, research on spontaneous and voluntary eye movements and their electrocortical correlates. Furthermore, attention disorders have become an important field of research due to the widespread incidence of attention-deficit hyperactivity disorder (ADHD). Additional comments on the psychological theory of apperception can be found in Chapter 3. 5 on general psychology.

Comments

Wundt demanded that neuroanatomical and neurophysiological questions be aligned with distinct psychological concepts. This conception of an interdisciplinary neuroscience has become common knowledge nowadays, however, Wundt's contribution to this development is hardly remembered.

Wundt based his central theory of apperception on neuropsychological modelling. Accordingly, the hypothetical apperception center in the frontal cerebral cortex that he described could interconnect sensory, motor, autonomous, cognitive, emotional, and motivational process components (Ziche, 1999; Fahrenberg, 2015b). Wundt thus was providing the guiding principle of a primarily psychologically oriented program of research on the higher integrative processes. Current research on cognitive executive functions in the prefrontal cerebral cortex pursues very similar aims. For Wundt, it would have been of utmost interest to know about such research findings and about the increasing interest in research on corresponding "emotional executive functions." Could it be that the hypothetical convergence zones of ventral and dorsal connections in the PFC and multimodal convergence zones on other levels, e.g. the heteromodal cortical-limbic networks, are executing the kind of integration that Wundt had in mind?

Psychophysiology

Expressive movements that accompany feelings can be integrated into the apperception process, i.e. the facial expression and the respiratory and vasomotor symptoms (1911, p. 370). The vagal innervation of the heart is used as an example to explain the effects caused by physiological self-regulation or neurophysiological stimulation as well as the influence exerted by the apperception center, with a correlation of exciting and inhibiting innervations in the emerging pattern of symptoms. Wundt, instead of using the generic term emotion, distinguished feelings from the affects, which are connected with distinct physical excitation. With the assistance of physiological recordings, one could try to observe and measure such patterns. Wundt assumed that there are characteristic physiological changes, especially in states of excitation, tension, and relaxation (cf. Chapter 3. 5 for his three-dimensional theory of emotions). Thus, Wundt complied with a research approach now called *psychophysiology* of emotions. During the final third of the 19th century there were extensive experimental studies based on the assumption that one could objectively discern affects according to their physiological correlates.

Wundt's colleague in Leipzig, the physiologist Carl Ludwig, invented an important methodical and technical prerequisite by constructing suitable kymographs, which could record several physiological functions on a cylinder covered with a sooty paper strip. The Danish psychologist Alfred Lehmann (1892, 1912), who was a student of Wundt's, established a psychophysiological laboratory in Copenhagen and published a series of investigations and recordings depicting pulse, pulse

volume, and respiration (pneumogram). These psychophysiological methods were also introduced in Wundt's laboratory. Meumann, Lange, Mentz, Störing, and others, carried out similar experiments. Sensory stimuli and different tasks were used in order to incite affective reactions (cf. Fahrenberg, 1965; Schönplflug, 2008; Stemmler, 2009).

Today, the term psychophysiology usually denotes a *coordinated* research methodology, on three levels, subjective, behavioral and physiological data, complementing each other. Presumably, Wundt did not know of that term, introduced by the psychiatrist Christian Friedrich Nasse (1822), or chose not to adopt it. It was only Hans Berger (1921) who, just before his discovery of the EEG, defined psychophysiology in the modern sense as two coordinated research perspectives with equal legitimacy.

Neuropsychology and Psychophysiology, Physiological Psychology and Biological Psychology

Applied to Wundt's research, the terms *neuropsychology* and *psychophysiology* could reinforce the persistent misunderstandings introduced by the title of his book "Grundzüge der physiologischen Psychologie." Especially in the neighboring fields of psychology and physiology, the scientific terminology remains precarious because of the traditional connotations. Many terms refer to basic assumptions concerning the starting point of research and essential research questions, the preferred research strategy and methodology, and even philosophical assumptions with regard to causal interaction or parallel relationships between psychical and neuronal processes (mind-body problem). Such presuppositions can have consequences for research strategies in terms of which designs, experimental paradigms, and measurable or observable variables are considered to be adequate and on which side, physiology or psychology, methodological compromises and deficiencies are more likely to be accepted.

With regard to Wundt's conception, one has to remember his strict epistemological as well as methodological distinction between the perspectives of neurophysiology and psychology. The current term "neuropsychology" would be misleading here if it is used in a reductionist manner. During Wundt's time, there was a widespread tendency towards reductionism with the introduction of positivism and materialism, i.e. mental processes were reduced to brain functions instead of making a methodically strict distinction and reflecting on what would have been severe *category mistakes* from Wundt's point of view.

Although Wundt's starting point was neurophysiology and he maintained a strong interest in neuropsychology and psychophysiology, one must remember that his main perspective was the psychological one in the *Beiträge* (1862) and *Vorlesungen* (1863). The physiological concepts remained an indispensable part of Wundt's comprehensive approach, however, they were only a complementary perspective in his understanding of psychology. "Physiology explains those phenomena of life that can be observed by our external senses. In psychology, man looks at himself, so to speak, from the inside and tries to explain to himself the connections of the processes that his inner observations present to him." (1874, p. 1). Wundt assigns the following tasks to physiological psychology: "First, to examine those processes of life that, being in the realm of external and internal experience, require a simultaneous application of both methods of observation, namely, the internal and the external. Second, to cast light on the entirety of life processes starting with the knowledge gained from observations in this field, and if possible, to impart a total comprehension of human existence" (1874, p. 47). "The attribute 'physiological' does not mean that it [the physiological psychology] wants to reduce psychology to physiology, what I would call impossible, but that it proceeds with physiological, i.e. experimental means, and takes the relations of mental and physical processes into greater consideration than is usual in either field of psychology" (1896b, p. 21).

In his final remarks as editor of the journal *Philosophische Studien*, Wundt wrote on the "mere physiological interpretation of mental phenomena" which he calls one of those teething problems ("Kinderkrankheiten") of science" (1903, 18, p. 795). He rejected referring to mental processes, feeling, and thinking as *brain functions* because he strictly defined "function" as transforming one term into another by mathematical operations. However, an "analogous homogeneity", i.e. a linear and direct dependency, does not exist between psychology and physiology (*Vorlesungen*, 4th ed., 1906a, pp. 6-7).

Today, the term "physiological psychology," just like "biological psychology," is mainly used for a research orientation in psychology that primarily proceeds from the physiological and biological basis as well as with physiological concepts and explanatory hypotheses. However, this approach and the extent of the reduction of data, methods, and theoretical assertions remains under discussion. In the history of psychology, a view of psychology as a *natural science* is often ascribed to Wundt, however, Wundt strictly denied such an interpretation. Psychology cannot be reduced to physiology. Regarding the kind of scientific program that now interprets psychological concepts as if they belonged to the natural sciences, one has to point out the categorial independence of psychology.

This also provides a background for understanding Wundt's comment on the simple equation: "mental disease equals brain disease." He criticized the attempts of some well-known physiologists and anatomists (he referred to Meynert, Flechsig, Hitzig, and Munk) to locate the etiology exclusively in the physical conditions of the accompanying brain disease" (1911, pp. 652-653). Wundt considered Emil Kraepelin's position and especially Sigmund Freud's approach to be more promising. The psychological experiments that Kraepelin carried out in Leipzig during 1882 and 1883 with support and some advice provided by Wundt should also be mentioned here. Kraepelin examined the central effects of alcohol, coffee, and tea, as well as of chloroform, morphine, and other drugs by means of psychological tests such as the *Kraepelin method* of continuous

addition. These experiments, including their methodology, are regarded as pioneering works in psychopharmacology with healthy persons (Müller, Fletcher and Steinberg, 2006).

3.4 Animal psychology

“Before I start to demonstrate the phenomena that are ascribed to the soul by means of observation and experiment, I want to make a remark. I consider it a major disadvantage and handicap that we voluntarily impose on ourselves to confine myself to observing the human soul, although it interests us the most and occupies us most of the time. We observe phenomena in animals that indicate sensibility, feelings, concepts, and even thinking.” We have the opportunity to “unite all our fellow creatures [“Mitgeschöpfe”], from the simplest, who show nothing more than some sensibility and free movement, up to man, who is a complex organism even with regard to the mental processes, in one great representation of the animated world. What we are unable to unravel by only examining humans will become clearer when we observe the less complex forms of life. Even mental life is a hierarchical realm (“Stufenreich”) of forces, in which one being is bound to another in an unforeseeable chain (1863, I, p.23).

“The main topics consist of the distinction of one’s own being (“Wesen”) from the external world or emerging consciousness, followed by the connection of representations and memory, and lastly the formation of concepts and outward communication. Man does not exist outside of that evolutionary line, nor does he inhabit a singular sphere of being, but rather obtains the relatively highest position on this line of evolution. Neither conceptual thinking nor language are exclusive to man. Undoubtedly, the more accomplished animals are capable of generalized mental representations. However, generalized representations and concepts are—as we have argued before—not very different from each other with regard to their essence and formation. It is also certain that many animals have means of mutual communication, a sign system or sound language. This is the point where the field of animal psychology should eagerly begin its future investigations. Our observations are capable of proving that certain animals have language.... Only a researcher who devotes himself to the study of animal languages will be capable of providing animal psychology a foundation. Animal language reveals the mental life of our fellow creatures to us not only by what it expresses, but also by what it is as such. The richness of language and its formation reveals the mental life of animals in its entirety to us. One could presume that the decoding of animal languages would not be too difficult a task in some cases. Since human languages have been decoded from historical periods in which all other relics are no longer extant, one would think that it is possible to decipher the language of an animal that furnishes us with easily understandable messages through its actions” (1863, I, p. 459-460).

It follows from Wundt’s central focus on investigating the development of the human mind that comparative approaches to cultural psychology, child psychology, and animal psychology are important parts of this program. Thus, animal psychology is a constituent part of psychology for Wundt. When particular laws pertaining to mental development are sought in the animal world, one can observe preliminary stages of sensory perception, volitional (instinctive) action, social formations, the expression of feelings, language, and mental development. In four of his 57 *Vorlesungen zur Menschen- und Tierseele* (Lectures on human and animal soul), Wundt refers mainly to animal psychology, and in many other lectures he mentions observations from this field. Wundt cites several works as his main sources on animal psychology, including Reimarus’ *Allgemeine Betrachtungen über die Tiere* (General considerations on animals, 1773), Scheitlin’s *Versuch einer vollständigen Tierseelekunde* (Attempt at a comprehensive animal psychology, 1840), Brehm’s *Das Leben der Vögel* (The life of birds, 1861), and Espinas’ *Die tierischen Gesellschaften* (Animal societies, 1879).

Wundt was so dissatisfied with some parts of his lectures and the general reception they encountered, that he postponed a second, revised edition until 1892, nearly three decades later. He separated out the lectures on cultural psychology, which eventually led to another main work (*Völkerpsychologie*, 1900-1920), whereas the sections on animal psychology in the *Vorlesungen* were revised and considerably enlarged. Wundt dealt with the following topics in three lectures (nos. 23, 24, and 28) of about 100 pages:

- Tasks and flaws of animal psychology
- Theory of intelligence, reflexes, and instincts
- Stages of consciousness in the animal world
- Psychical and physical interpretation of animal movements
- Existential phenomena in lower animals;
- Indications of life (“Lebenszeichen“);
- Psychology of arthropods and mollusks
- Memory in fishes
- Mental abilities of higher animals
- Animal games

- Formation of concepts and conclusions
- General significance of associations
- Animals and humankind
- Social instincts
- Association and friendship among animals;
- Animal matrimony
- Animal societies and states
- Evolution of animal and ant states

In *Grundzüge* (1874), animal psychology is not treated separately; however, Wundt is still concerned with the comparative perspective as demonstrated by his essay *Über den gegenwärtigen Zustand der Tierpsychologie* (On the current state of animal psychology, 1878). Psychological observation of animals had been “almost completely neglected by professional psychologists, as is well known” (p. 137). He primarily discusses problems of methodology, preconceptions, and unusual analogies in the field. He rejects the concept of an “animal state,” then widespread in biology, because the ant state is actually characterized by a physiological division of labor without state institutions, thus it is more akin to a family or society. Wundt called for more detailed observations. “What a goldmine of refined psychological observations is Darwin’s book *The Expression of the Emotions in Man and Animals!*” (p. 139). Wundt demands thorough protocols of observations: “It is at this point that one can perform psychological experiments on animals as intended, and not just occasionally as is current practice, but rather deliberately expose them to certain conditions in order to observe their impact” (p. 112). “Unfortunately, there is a lack of systematically executed and recorded observations of anthropoids. Let us hope that the favorable opportunity presented to us by the gorilla at the *Berlin Aquarium* (then called *Zoologischer Garten*) does not pass by unused” (p. 114).

These investigations, however, did not take place because of the death of this gorilla. It is obvious that psychologists at the Berlin Institute of Psychology did not realize this as an opportunity for research. Later, when the *Primate Center on Tenerife* led by Wolfgang Köhler was dissolved due to his return to Germany in 1920, several of the chimpanzees came to the *Berlin Zoo* near the Institute of Psychology, where Köhler served as director. Research suggests that the Institute did not take further notice of these primates, including the well-known chimpanzee *Sultan*. It is noteworthy that the first director of the Primate Station before Köhler came to the Canary Islands was Eugen Teuber. Born in Berlin, Teuber entered the University of Leipzig to study under Wilhelm Wundt before continuing his doctoral studies at the University of Berlin (<http://www.amphilsoc.org/library/mole/t/teuber.htm>).

In later editions of the *Grundzüge* there are notes on topics related to animal psychology, e.g. in the section on instincts, reflex activity, and spontaneous movements, and on the expression of feelings, together with frequent references to Darwin (1911, pp. 235-271). The *Grundriss der Psychologie* (1920) includes a short section entitled *Die psychischen Eigenschaften der Tiere* (The psychical qualities of animals), which is contained in the chapter entitled *Die psychischen Entwicklungen* (The psychical developments). This short section leads to sections on *Die psychische Entwicklung des Kindes* (The psychical development of children) and *Die Entwicklung geistiger Gemeinschaften* (The development of mental communities). Wundt states that it must be conceded that possibly “the human consciousness has evolved from a lower, animal form of consciousness.”

Comment

Wundt’s firm decision to include animal psychology in the field of psychology was highly uncommon compared to contemporary German psychology textbooks and appears to have been rejected by many. For Wundt, the reference to animal psychology is self-evident, but apparently none of his assistants and co-workers shared this well-founded perspective. Külpe (1893) excluded animal psychology and cultural psychology without presenting any convincing arguments. Furthermore, the significance of Wundt’s approach was obviously not understood with regard to its methodology. Animal psychology depends exclusively on observation and potentially on experiments, whereas child psychology depends largely on observation.

As Wundt attempted to elaborate a developmental theory of the mind based on empirical psychology, he included this perspective in animal psychology as well. In the second half of the nineteenth century, Charles Darwin attracted attention with his biological theory of descent and his hypothesis of natural selection. Wundt obviously had no fundamental problems with combining the biological theory of evolution and the idea of development, which stemmed from the humanities (Herder, Herbart, Schelling). In the *Vorlesungen*, Wundt summarized the contemporary state of knowledge and was interested in intellectual accomplishments and societal forms of different species. However, in Leipzig he apparently refrained from initiating research on animal psychology. Thus, the revised fourth edition of the *Vorlesungen* (1906a) was the book in which Wundt dealt with this field in the greatest amount of detail, a field which was evaded by most authors of German textbooks on psychology during Wundt’s time, as well as by those of subsequent generations. Perhaps the term “animal soul” was too confusing for epistemological or religious and philosophical reasons. In his review from 1902, Donat seemed to be offended by the number of “Darwin’s fictions,” and he could neither imagine the development of language without the priority of

reason nor reconcile the idea of an evolution from animal to man with his belief in the creation of mankind according to the *image of God* [“Gottesebenbildlichkeit”]. Nietzsche (1990) provided an account of the origins and history of the reception of the *Vorlesungen* as well as Wundt’s early conception of psychology.

The term animal psychology was used, among others, by the biologist Otto Koehler (cf. *Zeitschrift Tierpsychologie*, 1937, since 1985 *Ethology*), and also in the former *Prüfungsordnung für Diplom-Psychologen* in Germany, which included the oral exam for this subject. At that time, the exam was usually carried out by a professor from the biology department. In Germany, Konrad Lorenz and other researchers developed *ethology* as a discipline within biology. The parallel with behaviorism is obvious: Because of his epistemological postulates, the radical behaviorist in human psychology refrains voluntarily from the information that is withheld from the ethologist.

Wundt was the first German author to review and summarize the available observations on animal behavior in the frame of a general and developmental psychology. In 1908, Margaret Floy Washburn published her book *Animal Psychology*. She referred to Wundt only once and in an anecdotal manner, although she probably was acquainted with Wundt’s oeuvre since she participated in translating Wundt’s *Ethik* (1897). Washburn was the first woman to be given a PhD in psychology, 1894, and, 1921, the second woman to serve as a president of the APA.

3.5 General Psychology

3.5.1 Introduction and Overview

Grundzüge der physiologischen Psychologie

“The work I am hereby giving to the public attempts to demarcate a new field of science.” This is how the *Grundzüge der physiologischen Psychologie* (1874), Wundt’s best-known work, begins. On the one hand, the *Grundzüge* is a textbook on the foundations and methods of psychology as well as the anatomy and physiology of the nervous system; on the other hand, it provides an orientation to “the state of affairs of a nascent science” and a demarcation of this field of empirical psychology oriented towards experiment. Wundt wanted to connect two sciences. “Physiology gives information about those phenomena of life that can be perceived by our external senses. In psychology, man looks at himself, so to speak, from the inside and tries to explain the connection of those processes that are presented to him by his inner observation” (1874, p. 1). “With sufficient certainty, the statement that nothing occurs in our consciousness that does not have a physical basis in certain physiological processes can be justified” (1874, p. 858).

First, Wundt dealt with the question of the scientific exactness of psychology and measurability of psychical processes. Wundt contradicted Kant’s fundamental objections by pointing out the success of Fechner’s psychophysics and by emphasizing *trained* self-observation. The main chapters contain detailed psychological descriptions of sensory impressions, representations, feelings, and volitional activity. There is also a basic distinction between psychical *elements* and *compounds* in conscious processes as well as the research project to investigate their dynamic *psychical connections*. Some related findings are included, and there is also an introduction to methodology that includes psychophysics, psychophysiological methods in research on feelings and affects, and chronometry in research on attention and apperception. In the book’s concluding chapter on the principles of psychology Wundt explained his epistemological and methodological views concerning the heuristics of psychophysical parallelism and the essential categories and principles of psychology. In contrast to the concept of causality in the natural sciences, Wundt elaborated *principles of psychical connections*, designated as *psychical causality*. These categories and relational concepts originated from his definition of psychophysical parallelism as well as from his notion of human beings as thinking and wanting subjects oriented toward values and purposes.

From 1874 forward, Wundt supplemented his *Grundzüge* in every new edition, and the fifth edition was expanded to three volumes. Its main objective was not to give a general overview of the field of experimental psychology anymore – in the meantime widely branched – but to present the findings and perspectives attained in the laboratory in Leipzig. Here, the quotations are mainly taken from the 6th edition in order to reflect the mature state of his work.

Grundzüge der physiologischen Psychologie (Principles of physiological psychology). (6. Auflage, 1908-1911; Nachdruck 7. Aufl. 1923. Insgesamt 2185 Seiten, 399 Abbildungen und zahlreiche Tabellen, Register)

I. Band (1908) (First Volume)

Einleitung: Aufgabe der physiologischen Psychologie. Psychologische Vorbegriffe. Methoden. Übersicht des Gegenstandes. (Introduction: The task of physiological psychology. Preliminary concepts of psychology. Psychological methods. Overview of the subject.)

Erster Abschnitt. Von den körperlichen Grundlagen des Seelenlebens: Organische Entwicklung der psychischen Funktionen. Bauelemente des Nervensystems. Physiologische Mechanik der Nervensubstanz. Formentwicklung der Zentralorgane. Verlauf der nervösen Leitungsbahnen. Physiologische Funktion der Zentralteile. (First section: On the physical foundations of psychological life: Organic development of psychological functions. Components of the nervous system. Physiological mechanics of the nerve substance. Development of the forms of central organs. Course of the nervous pathways. Physiological function of the central parts.)

Zweiter Abschnitt: Von den Elementen des Seelenlebens: Grundformen psychischer Elemente. Physische Bedingungen der Empfindung. Intensität der Empfindung. (Second section: On the elements of psychological life: Basic forms of psychological elements. Physical conditions of sensation. Intensity of sensation.)

II. Band (1910) (Second volume)

(Zweiter Abschnitt). Von den Elementen des Seelenlebens (Schluss): Qualität der Empfindung. Gefühlselemente des Seelenlebens. (Second section: On the elements of psychological life (final part): The quality of sensation. Emotional elements of psychological life.)

Dritter Abschnitt. Von der Bildung der Sinnesvorstellungen: Intensive Vorstellungen. Räumliche Tastvorstellungen. Räumliche Gesichtsvorstellungen. (Third section: On the formation of sensory representations: Intensive representations. Spatial-tactile representations. Spatial-visual representations.)

III. Band (1911) (Third Volume)

(Dritter Abschnitt). Von der Bildung der Sinnesvorstellungen (Schluss): Zeitvorstellungen. (Third section: On the formation of sensory representations (final part): Representation of time.)

Vierter Abschnitt. Von den Gemütsbewegungen und Willenshandlungen: Vorstellungsgefühle und Affekte. Willensvorgänge. (Fourth section: On emotional activation and volitional acts. Feelings, representations, and affects. Volitional processes.)

Fünfter Abschnitt. Von dem Verlauf und den Verbindungen der seelischen Vorgänge: Bewusstsein und Vorstellungsverlauf. Psychische Verbindungen. Anomalien des Bewusstseins. (Fifth section: On the course and connections of psychological processes: Consciousness and the course of representations. Psychological connections. Anomalies of consciousness.)

Sechster Abschnitt. Von den Prinzipien der Psychologie: Naturwissenschaftliche Vorbegriffe der Psychologie. Prinzipien der psychischen Kausalität. (Sixth section: On the principles of psychology: Preliminary concepts from the natural sciences in psychology. Principles of psychological causality.)

Concepts and Classifications

The detailed *Content*, altogether 14 pages, provides a comprehensive overview of Wundt's concepts and his classification of psychological topics. His terminology requires careful attention since essential differences from today's use exist and have to be considered, especially in translating into English. There are two terms at the core of his general psychology that have not adequate translation: *Vorstellungen* and *Gemütsbewegungen*.

The introduction contained in the following sections about key topics of the *Grundzüge* includes some important terminological comments as well as the classification that Wundt set up in the chapter entitled *Von den Elementen des Seelenlebens: Grundformen psychischer Elemente* (On the elements of mental life: Basic forms of psychological elements, 1908, pp. 398-419). He distinguished psychological *elements* from *compounds*, i.e. composite psychological processes, and he repeatedly emphasized the continuous flow of conscious processes, which significantly restrict psychological analysis and abstraction. Psychological elements are constituents of the psychological process that cannot be further broken down and that are immediately perceived, like the color *green* or a musical *tone*. "The psychological elements are pure products of conceptual abstraction, insofar as they do not really exist in the isolated and fixed state that we ascribe to them in order to examine their fundamental qualities. Nevertheless, they are immediate contents of the actual experience, because they can never be conceived of differently from the qualities pertaining to them in the immediate perception. They are products of conceptual abstraction, but at the same time they are contents of immediate perception itself, thus... actually of vivid quality" (p. 401).

Wundt emphasized that the external experience conveyed by our sensory perception and the conscious "inner experience" cannot be separated from each other (1908, p.1). The term *perception* is very rarely used by Wundt as shown by the alphabetical indices in his major works. It appears that he dispensed with this highly vague general term because his theory of *apperception* provided an elaborated theoretical concept as to how sensory impressions, representations, and emotional and volitional components are processed and integrated.

With respect to composite psychological processes, Wundt distinguished between two main classes of *compounds*: *Vorstellungen* and *Gemütsbewegungen*, which can be roughly translated as *representations* and *emotional activation*, respectively. According to Wundt, *Vorstellungen* are related to *external* objects, their characteristics or status, as either sensory representations, i.e. actual impressions, or impressions reproduced from memory. "Common language usage defines representation as the image of an object generated in our consciousness. In that general sense, we understand representation as encompassing

sensory perceptions as well as images of memory and fantasy” (1910, p. 384). Wundt, however, wished to disregard the notion of an “image” or picture on epistemological grounds since there is no single direct sensory representation without reproduced elements, thus qualifying this statement about direct and reproduced representation. The term “Gedanke” (thought) was not used by Wundt in *Grundzüge* or *Grundriss*; however, an exception is “Gedankenverbindung,” i.e. a compound built from representation and feeling.

“Gemütsbewegung” is “a generic term for complex feelings, moods, affects, and volitional processes” (p. 409). Wundt conceded that the definition and classification of “Gemütsbewegungen” in particular, are complicated by the long history of this term. The translation *emotional activation* is introduced here as a generic term including feelings and affects, i.e. *emotions*, and also *activation*, i.e. the *dynamics* referred to in “Gemütsbewegung.” He also pointed out basic constituents: “Sensations as elements of “Vorstellungen” and feelings as elements of “Gemütsbewegungen” (pp. 409-419). *Representations* here means *direct* sensation impression and *reproduced* experience relating to external experience. Wundt repeatedly emphasized that these concepts do not refer to a constant event or relationship, but to a process changing from moment to moment and are thus arbitrary abstractions.

The *Grundriss* (Outline of Psychology, 1920, pp. 109-110) contains short definitions: “Compounds that are composed wholly or primarily from sensations, we refer to as representations (Vorstellungen); those that consist primarily of elements of feeling, as emotional activation (Gemütsbewegungen). ... According to this, we distinguish at first between three main forms of representations: 1) intense representations, 2) spatial representations, and 3) temporal representations, as well as between three forms of emotional activation: 1) intense emotional connections, 2) affects, and 3) volitional processes (Willensvorgänge)” (p. 110). The English translations suggested for these basic terms remain inadequate. Charles H. Judd in *Outlines of psychology* (1897, pp. 58-59) translated “Vorstellung” as “idea,” thus missing the essential aspect of *sensory impression*, and instead choosing a term that signifies an original intellectual concept or a sudden or brilliant idea in German. Translating Gemütsbewegungen as “affective processes” omitted the intrinsic volitional component, and thus an essential basis of Wundt’s psychology.

The APA dictionary suggests the following: *Perception* is “the process or result of becoming aware of objects, relationships, and events by means of the senses, which includes such activities as recognizing, observing, and discriminating. These activities enable organisms to organize and interpret the stimuli received into meaningful knowledge and to act in a coordinated manner.” (p. 775). “Representation is that which stands for or signifies something else. For example, in cognitive psychology the term denotes a mental representation ...” (p. 908). “Mental representation is a hypothetical entity that is presumed to stand for a perception, thought, memory or the like during cognitive operations. ... However, there is no consensus yet as to what mental representations might be” (p. 641). *Cognition* is defined as “all forms of knowing and awareness, such as perceiving, conceiving, remembering, reasoning, judging, imaging, and problem solving. Along with affect and conation, it is one of the three traditionally identified components of the mind” (p. 202). Of course, “perception and cognition”, which are common nowadays in cognitive psychology and cognitivism, remain extremely vague terms.

It is evident from these distinctions that Wundt is concerned primarily – but not exclusively – with the actual conscious processes. However, consciousness did not attain the status of an independent “entity” as postulated by others at his time. Wundt is also interested in the physiological correlates, expressive movements, language, and actions. This approach, combined with experimental psychology, is distinctive to Wundt in comparison to other authors, who confined themselves to a “psychology of experience” and the “phenomena of inner perception.”

If, from today’s point of view, the general concept of “behavior” is missing in the *Grundzüge*, then it should be pointed out that Wundt used equivalent and often more precise terms, i.e. expressive movements, speaking (language), reflex and motor activity, vasomotor changes, and instinctive and voluntary activity. The concept of “element” in Wundt’s psychology was often emphasized in the secondary literature, and he has been criticized for his alleged “Elementenpsychologie” (psychology of elements, elementarism) without his primary interest in compounds, psychical connections, and integrative processing being recognized.

Definition of Physiological Psychology and Experimental Psychology

“The title of the present work indicates that it attempts to connect two sciences ... Physiology and psychology both examine general, and especially human, phenomena of life. Among these phenomena, physiology investigates those that presented to our sensory perception as physical life processes, and, as such, make up an integral part of the entire external world surrounding us. Psychology, however, attempts to report on the context of those phenomena of life that present our own consciousness to us, or that we deduce from the expressions of life in other beings, which have effects on a consciousness similar to our own” (*Grundzüge*, 1908, p. 1).

“Thus, *physiological psychology* is primarily psychology, and, above all, it tasks itself – just like any other mode of representation in this science – with investigating conscious processes in their own context. It is neither a part of physiology, nor does it want, as has been claimed misleadingly, to deduce or explain the mental from the physical phenomena.” (p. 2). “As an experimental science, however, physiological psychology aspires to reform psychological research, which is of no

minor importance to the revolution that led to the introduction of experiment in scientific thought. In a certain respect, it may even be superior to this introduction, insofar that in the field of natural sciences, under favorable conditions, an exact observation is possible even without an experiment, whereas this is excluded in the psychological field. Since only 'pure self-observation' can be called an observation in a very restricted sense, it cannot claim to be exact at all. But the essence of an experiment consists in the deliberate and, as far as the establishing of exact relations is concerned, quantitatively definable modification of the conditions of observation. Thus, the experimental method is becoming an indispensable aid or research in the natural sciences wherever it concerns the analysis of rapidly developing, transient phenomena, but not the observation of relatively constant objects.

Yet the contents of consciousness are never constant objects, but processes, volatile events that continually replace each other in alternation." The psychological experiment establishes external conditions in order to bring about a certain psychical process at a given moment, keeping the other states of consciousness roughly constant. This deliberate variation in the conditions of observation is one of two important main aspects of the experimental method; the other is making the results fruitful even for those mental phenomena, which by their nature do not allow direct experimental influence." (pp. 4-5).

"In addition, it is fortunate that where experimental methods fail, psychology is served by other tools of objective value. These tools consist in certain products of the entirety of mental life, which allow one to infer certain psychical motives. Among these are primarily language, myth, and customs. ... In this way, experimental psychology and *Völkerpsychologie* form the two main branches of scientific psychology. They are complemented by the fields of animal psychology and child psychology, which, together with cultural psychology, attempt to solve problems in the history of psychological development. Experimental psychology, in the narrow sense of the term, and child psychology can ultimately be summed up as individual psychology, whereas cultural psychology and animal psychology form both parts of a general, or comparative, psychology." (p. 54) (For a short section on the psychological development of children, see *Grundriss*, 1920, pp. 349-364).

Elsewhere, Wundt explained the task of *physiological psychology* as follows: "... first, to investigate those life processes, which, standing halfway between external and inner experience, require the simultaneous application of both external and internal observation methods, and second, to cast a light on the entirety of life processes from the perspectives gained by investigating this field, and, if possible, to convey a comprehensive understanding of human existence. ... The attribute 'physiological' does not say that it [physiological psychology] wants to reduce psychology to physiology – what I would call impossible –, but that it proceeds with physiological, i.e. experimental means, and takes the relations of mental and physical processes into consideration more than usual in other fields of psychology" (1896b, p. 21).

Metaphysical Presuppositions

In his introduction to *Grundzüge*, Wundt strived to dissociate himself from the metaphysical presuppositions of psychology. He sharply criticized the Herbart school, because its teachings, employing the title of *empirical psychology*, consisted of a mixture of metaphysical hypotheses and the results of self-observation without training. "In contrast, the focal point of a psychological experiment is that it actually makes reliable self-observation possible at all, and that it therefore sharpens the psychological apprehension even for such processes, which are not accessible to direct external influences." Thus, the concept of experimental psychology has expanded beyond its borders, because "through it, we understand not only the parts directly accessible to experiments, but the entire individual psychology, ... directly, where the experimental method is applicable, and everywhere else indirectly by applying the general results obtained there, and through the improved focus of psychological observation" (1908, p. 7). "Yet even within experimental psychology there has been no lack of relapses into a metaphysical treatment of psychology." For instance, physiological psychology is defined from the outset in a sense that already contains a certain metaphysical presupposition, i.e. "to interpret the phenomena of consciousness by reducing them to their physiological conditions." Furthermore, there are claims that even the elements of the processes of consciousness may be of a special nature. The "regularities of the connections between these elements could not be found anywhere using psychological methods; a scientific description or explanation of compound (integrated) psychical processes would only be possible by detecting physiological connections existing between the physiological processes that correspond to those psychical elements. Accordingly, there is no psychical causality, but only a physical one; therefore, every causal explanation of a psychical event must be a physiological one. Thus, this point of view is usually designated as psycho-physical materialism" (1908, p. 7). Wundt is referring here to English association psychology (Spencer, 1882), and mainly to his former doctorate student Hugo Münsterberg (1891, 1900). Similarly, psychology would become an appendix of the natural sciences and would have nothing to do with the mental sciences or philosophy. "That the mental life itself is the problem of *psychology* is considered here a prejudice from earlier times." (p. 8).

In the two final chapters of the sixth edition of *Grundzüge*, Wundt presented his *system of principles*, i.e. basic epistemological and methodological assumptions that determine his conception of empirical psychology in the overlapping area of natural and mental sciences. As in the first edition, he discussed preliminary concepts that psychology had adopted from the natural sciences in a revised version, in particular, mechanics and energetics, mechanism and vitalism, as well as causality and teleology of psychophysical processes (pp. 655-733). The *principle of psychical causality* is treated in a separate chapter.

Starting with the metaphysical concept of the soul and the heuristics of psychophysical parallelism, he explained five principles, including the *principle of creative synthesis* and the *principle of the heterogony of purposes and ends* (pp. 733-770). Wundt's system of categories and principles is systematically presented in Chapter 3. 8 and 5. 4. Here, only a few examples are presented in the following sections.

The *Grundzüge* differs from standard textbooks of general psychology in many respects. The anatomy and physiology of the central nervous system take up a relatively large part. The subsequent chapters based on experimental research in psychology include detailed descriptions of methods and specific findings. Today, it would be unusual to insist on a discussion of basic psychological concepts and orientations, and to point out their origins and contradictions in the context of the history of ideas. Such dense reflections on epistemology and the theory of science were unusual even in textbooks of Wundt's time, whereas in most of today's standard textbooks there is not much to be found about philosophical presuppositions and the fundamental controversies in theoretical psychology. Wundt's comprehensive intellectual horizon and high level of aspiration are obvious.

Wundt's *Grundzüge* (1908-1910) is certainly not an easy textbook, but rather a highly differentiated compendium of experimentally oriented general psychology, and a comprehensive report on the decades-long research activities of the author and his co-workers in Leipzig. It is a fundamental summary of the state of knowledge as assessed from the theoretical point of view of the founder of experimental psychology and of psychology as a discipline. Furthermore, *Grundzüge* contained the general psychological foundations of cultural psychology, namely the theories of *apperception* and *motivation*.

Today, the first edition from 1874 based on his formative years at the University of Heidelberg is cited most often, and it is obviously important for the history of psychology. However, the subsequent editions were mostly omitted as if the more than 30 years of research in Leipzig, which culminated in the three-volume sixth edition (1908-1911), was irrelevant. The three-volume *Grundzüge* is more of a handbook than a textbook, which is probably why Wundt later wrote an introductory textbook: *Grundriss der Psychologie* (Outline of psychology) as well as an even shorter *Einführung in die Psychologie* (Introduction to psychology).

Grundriss der Psychologie

Wundt considered this book, which had the greatest number of editions among his main works, partly a supplement and partly a preparation for the *Grundzüge*. According to the preface, the *Grundriss* is intended as a guideline to supplement Wundt's *Vorlesungen über die Menschen- und Tierseele* (Lectures, see Chapter 3. 1) and also, as an overview of recent psychology for a wider public. It was therefore confined to the most important issues and omitted many details. Thus, it presents the basic aspects of psychology "in its own context" (1908, 1, p. 43 Fn). The *Grundriss* lacks the range of content and the vividness of the *Lectures*, which in this respect is a better introduction to Wundt's entire program from its beginnings.

Grundriss der Psychologie (Outline of psychology.) (1896, 14. Auflage 1920, 406 Seiten)

Einleitung (Introduction)

Aufgabe der Psychologie. Allgemeine Richtungen und Methoden der Psychologie. Allgemeine Übersicht des Gegenstandes. (The task of psychology. General directions and methods of psychology. General overview of the subject.)

Die psychischen Elemente. (The psychical elements.)

Hauptformen und allgemeine Eigenschaften der psychischen Elemente. Die reinen Empfindungen. Die einfachen Gefühle. (Main forms and general qualities of the psychical elements. Pure sensations. Simple feelings.)

II. Die psychischen Gebilde. (Psychical compounds.)

Begriff und Einteilung der psychischen Gebilde. Die intensiven Vorstellungen. Die räumlichen Vorstellungen. Die zeitlichen Vorstellungen. Die zusammengesetzten Gefühle. Die Affekte. Die Willensvorgänge. (Definition and classification of psychical compounds. The representation of intensity. Spatial representations. The representation of time. Composite feelings. Affects. Volitional processes.)

III. Der Zusammenhang der psychischen Gebilde. (The connection of psychical compounds.)

Bewusstsein und Aufmerksamkeit. Die Assoziationen. Apperzeptionsverbindungen. Psychische Zustände. (Consciousness and attention. Associations. Apperceptive connections. Psychical states.)

IV. Die psychischen Entwicklungen. (Psychical developments.)

Die psychischen Eigenschaften der Tiere. Die psychische Entwicklung des Kindes. Die Entwicklung geistiger Gemeinschaften. (Psychical attributes of animals. The psychical development of the child. The development of mental communities.)

V. Die Prinzipien und Gesetze der psychischen Kausalität. (The principles and laws of psychical causality.)

Der Begriff der Seele. Die Prinzipien des psychischen Geschehens. Die allgemeinen psychischen Entwicklungsgesetze. (The concept of the mind (soul). The principles of psychical processes. The general laws of psychical development.)

Wundt explained how the *Grundriss* relates to his earlier work: “As the *Grundzüge der physiologischen Psychologie* try to make the tools of natural sciences – especially from physiological research – useful for psychology, and to critically present the experimental method, this special task necessarily places aspects of general psychology into the relative background. However, the second, revised edition of the *Vorlesungen über die Menschen- und Tierseele* intended to convey the knowledge and purpose of experimental psychology in a more popular manner in order to discuss psychological questions of general philosophical interest from such a point of view. Whereas in the *Grundzüge*, the point of view is characterized by relations to *physiology*, and in the *Vorlesungen* by relations to *philosophical* reflection, the *Grundriss* intends to present psychology in its own context and in that systematic order, which is, in my opinion, required by the nature of the subject, but confined to the most important and essential facts” (Preface to the first edition of the *Grundriss der Psychologie*, 1896a, p. IV). In addition, Wundt refers to further explanations given in *Logik* (1921).

Definition of Psychology

Wundt (1920b, pp. 17-18) approaches his definition of psychology with epistemological considerations and frequent reference to the goals and methods of the natural sciences. He summarizes his reflections in three sentences:

“(1) The inner or psychological experience is not a special sphere of experience apart from others, but it is the immediate full experience in its totality. (2) This immediate experience is not a stationary content, but a relationship between events; it is not made up of objects, but of processes, namely the common human experiences and their lawful interrelations. (3) Each of these processes has, on the one hand, an objective content and, on the other hand, is a subjective process, and in this way, it includes the general conditions of all knowledge, and also, of all practical human activities.

These three provisions correspond to a *threefold position* of psychology in relationship to other sciences:

(1) As the science of immediate experience, it is the supplementary empirical science in relation to the *natural sciences*, which, as a result of the abstraction from the subject have to do only with the objective, *mediated* contents of experience. Any particular fact can, strictly speaking, be understood in its full significance only after it has been successfully subjected to the analysis of both natural science and psychology. In this sense then, physics and physiology are auxiliary to psychology, and the latter is, in turn, supplementary to the research on nature.

(2) As the science of the universal forms of immediate human experience and their laws of connection, it is the *foundation of the mental sciences* because the content of the mental sciences exists everywhere in the actions resulting from immediate human experiences and their effect. Insofar as psychology investigates the manifestations and laws of these actions, it is itself the most general mental science and at the same time the basis of all individual sciences, such as philology, history, economics, law, etc.

(3) Since psychology evenly considers the *two fundamental*, subjective and objective, conditions underlying theoretical and epistemic reflection as well as practical actions, and seeks to determine their interrelation, it is among all empirical disciplines, the one whose results come first to assist in examining the general problems of *epistemology* and *ethics*, the two fundamental domains of *philosophy*. Psychology is supplementary to natural science, and likewise is the *fundamental* one with respect to mental sciences, and it is therefore the *preparatory empirical science* related to philosophy.” (abridged; adopted from the translation by partly adopted transl. by Charles Hubbard Judd, *Outlines of psychology*, pp.13-14).

General psychology deals with the individual consciousness as so-called *individual* psychology. In contrast, *cultural* psychology demonstrates the general laws of mental development. The field of higher mental processes includes the development of thought, language, artistic imagination, myth, religion, and custom, as well as the relationship of the individual to the community, the mental environment, and the emergence of the mental products of the community. “Now even general psychology cannot completely ignore the fact that the consciousness of the individual is under the influence of its environment. Traditional ideas, language and the ways of thinking are contained in it, finally the profound effect of education, they are preconditions of any subjective experience. These conditions require that numerous facts of individual psychology become accessible only from a complete understanding of *Völkerpsychologie*.” (1900, 1, p. 1). Psychological laws and the developmental theory of the human mind are the most common goal of psychology. Cultural psychology deals with “people in all relationships that transcend the boundaries of singleness and who refer to mental interaction as their general condition. ... According to this, psychology, has two reliable methods. The first, the experimental method, is used to analyze simpler psychological processes; the second, the observation of universal mental products, is used to study higher mental processes and development.” (*Grundriss*, 1920c, p. 30).

Wundt’s methodology in cultural psychology will not be elaborated until later. It deals with the analytical and comparative observation of objectively available material, i.e. material from language, myth, religion, and custom, namely, reports and observations on human accomplishments in earlier cultures, and rarely direct ethnological source material. The results of experimental studies, statistics, and other sources of information are also used. The first volume of the *Völkerpsychologie* and the *Elemente der Völkerpsychologie* lack detailed descriptions of the methodology. It is only in *Logik*, and not until the more

detailed 3rd and 4th editions, that Wundt, based on the tradition of the humanities and hermeneutics, presented his methodology for the critical interpretation of intellectual works. It is the first of its kind, albeit short, written by a psychologist (cf. Chapter 3.6).

Einführung in die Psychologie

“The following introduction neither intends to discuss the preliminary concepts of psychology that originate from the natural sciences or philosophy, nor does it present an overview of the investigations and results of psychology itself. This little book aims at an introduction to the basic thoughts of current experimental psychology and refrains from all illustrative facts and methods indispensable for a more thorough study. But nowadays, even an introduction in this sense cannot do without the facts or experimental methods. But only relatively few results of fundamental importance are needed to understand the essential thoughts of current psychology ... To the reader wanting a more elaborate presentation of recent psychology, I would recommend my ‘Grundriss der Psychologie’ (11th ed. 1913), and for the higher mental processes, the ‘Elemente der Völkerpsychologie’ (1912).” (Preface, p. III).

Einführung in die Psychologie. (Introduction to psychology.) (1911, 5. Auflage 1920. 129 Seiten.)

I. Bewusstsein und Aufmerksamkeit. (Consciousness and attention.)

II. Elemente des Bewusstseins. (Elements of consciousness.)

III. Assoziation (Association.)

IV. Apperzeption (Apperception.)

V. Gesetze des Seelenlebens. (Laws of mental life.)

3. 5. 2 Topics in General Psychology

The psychology of sensory perception and the further development of psychophysics since Fechner is an obvious starting point. This is the general field of research for the new experimental psychology. Furthermore, it was initially this field on which Wundt worked intensely and which was essentially shaped by his research. The chapter entitled *Physische Bedingungen der Empfindung* (Physical conditions of sensation) is followed by *Intensität der Empfindung* (Intensity of sensation) at the end of volume I (1908, pp. 525-679) as well as *Die Bewusstseinsinhalte als Grössen* (The contents of consciousness as quantities) and *Allgemeine Grundlagen psychischer Messungen* (General foundations of psychological measurements). This elaboration picks up the thread of the introduction to the 1st edition of the *Grundzüge* (1874), where Wundt firmly opposed Kant’s judgement that an exact, i.e. mathematically formulated psychology based on psychological measurement, would be impossible. This controversy about “psychometry” still exists, and its essential arguments are discussed in Chapter 3. 8.

In the long chapter entitled *Intensität der Empfindung* (*Intensity of sensation*), Wundt presented the research approach pursued by psychophysics in detail, as well as experimental and statistical methods, the manifold empirical findings, and his theoretical conclusions. In line with this advanced state of research, he also discussed *Weber’s law* and the work of Fechner, as well as other results in psychophysics. Furthermore, he criticized several widespread assumptions, including the *Law of specific sensory energies* established by Johannes Müller. These chapters on sensory psychology constitute the foundation of *General psychology* and are followed by other main chapters on feelings, affects, drives and will (motivation). Wundt did not explicitly discuss the fundamental issue regarding the extent to which the methods of sensory psychology, including the experimental method of controlled self-observation, methods of psychophysical measurement, and auxiliary methods of physiology, could be transferred and applied to other fields.

Here the primary focus is on apperception theory, the psychology of the will (e.g. volitional psychology, theory of motivation), and the theory of feelings and affects. These topics are characteristic of Wundt’s work, and can be considered the most elaborated in some respects. His theories of apperception and volition postulated self-active, purposive, and creative processes beyond reflexive and instinctual activity. Creative synthesis as evident in self-active apperceptive processes is an essential principle in *General psychology* as well as in Wundt’s *Cultural psychology*.

The *Grundzüge* deal extensively with central topics in general psychology, including the qualities of sensations, the formation of spatial, tactile, and visual representations, the supplementation of nativist and empiricist theories of spatial perception, the concept of time, elementary aesthetic feelings (e.g. sound and color harmony, rhythmic feelings), the development and stages of consciousness, expressive movements, complex intellectual functions (e.g. memory, reading, writing), intellectual capacities and dispositions (e.g. memory, imagination, and cognitive abilities), and emotional dispositions (i.e. the classification of four temperaments as defined by Galen and Kant according to the strength of feelings and the speed at which they change). Finally, there is a section on the anomalies of consciousness and on sleep and dream, as well as a short elaboration on mental disorders with references to Kraepelin and Freud. Despite this wide horizon, there are some remarkable

omissions, such as thinking (reasoning), imagination, language, and expression. Wundt does deal with these topics, but in a different context. The *System der Philosophie* (1919b, 1, pp. 27-338) and *Logik* (1919, pp. 1-637) include comprehensive sections on formal logics and basic laws of thinking vis-à-vis knowledge, perception, intellect, and reason, as well as concepts, i.e. pure formal concepts and categories such as reality, substance, causality, and purpose. Wundt's *theory of language*, which also involves a concise theory of thinking, psychological aspects of imagination, and artistic aptitudes are mainly contained in several volumes of *Völkerpsychologie*.

Since Wundt often refers to certain *principles of psychical causality* (cf. Chapter 3. 8), the following sections on apperception theory, volitional psychology, and the theory of emotions each include an exemplary reference to one of the typical principles, i.e. the principle of creative synthesis (emergence principle), the principle of heterogony of purposes and ends (intended and unintended consequences of actions), and the contrast principle.

3. 5. 3 Apperception Theory

Consciousness and Attention

Consciousness, as understood by Wundt, is the entire content of the immediate experience, i.e. the formation of representations (*Vorstellungen*) from sensory impressions in “the coming and going of representations and feelings” (1911, p. 297). Wundt assumed a continuous process of consciousness, but with various degrees of clarity. He also referred to dreams and hypnosis but rejected the conception of “the unconscious.” He distanced himself from metaphysical assumptions of this kind and also from Sigmund Freud's psychoanalysis. Wundt often mentioned Leibniz, but extensive references and commentaries are only to be found much later in his essay on Leibniz (1917).

The Concept of Apperception

Apperception is Wundt's core theoretical construct. He distinguished between two meanings of *apperception*, namely, as a clear representation compared to a mere vague perception and as the integration of such representations into self-consciousness. Wundt follows two assumptions originating from Gottfried Wilhelm Leibniz. First, that there is a continuum between the unnoticed “little perceptions” and apperception as inclusion of sensory impressions into the consciousness, which entails the emergence of self-consciousness and individuality. This process is influenced by the active striving of man (with Leibniz's Latin term, *appetitus*).

“We want to designate the entry of a representation into the inner field of vision as a perception, and its entry into the focus (or field of attention) an apperception” (1874, p. 718; 1911, p. 307). The two main criteria are the clarity of the apperception and the various degrees (thresholds or phases) of consciousness. In the “state of attention,” increasing clarity of a certain content of consciousness is related to a typical feeling (1908, p. 381). First, the orienting of attention implies an increased awareness and, second, it connects with emotional tones of increasing clarity and tension, as well as with other emotional and volitional processes to a certain extent. Psychological investigations and measurements are suited to assess the attention span, disruptive effects on attention, oscillations of attention, expectations and fatigue, as well as over- and under-adaptation (1908, pp. 579-587).

Initially, Wundt aimed at a “merely empirical-psychological definition” and wanted to leave aside the relation to self-consciousness, only adopting the first feature from Leibniz, i.e. the relative clarity of the contents of consciousness (1911, pp. 322-323). *Apperception* stands for the selective control of attention. In a later chapter, Wundt elaborated on the second meaning by defining apperception – including the feelings and representations attached to it – as “the main carrier of self-consciousness,” and he designated this self-consciousness as “I” or “ego” and as the “individual personality” (in a psychological sense, not a philosophical, metaphysical one) (1911, p. 354). In a generalized sense, apperception is an integrative process in which sensory impressions, feelings, and volitional activity are actualized, accentuated, selected, analyzed, evaluated, oriented, combined, and expressed in different ways. Thus, they are not just “processed,” but integrated and “creatively synthesized.” This process is dynamically influenced by the individual's active aspiration, i.e. primarily by motives and not by thinking or “cognitive control systems”. Apperception is an activity added to the passive association – which is idiosyncratic and selective as well as imaginative and comparing – as an apperceptive volitional act and an apperceptive representation. Wundt sought to distinguish between, and separate perceptual, cognitive, and emotional aspects of this *multi-modal* process based on observations, descriptions, and psychological experiments, especially with mental chronometry. The wide variety of experimental paradigms and technical devices are not described or evaluated here.

In accordance with current research, Wundt outlined a *neuropsychological modelling* of apperceptive processes in frontocortical structures of the brain, and he considered autonomic and motor components as well (cf. Chapter 3. 3). The theory of apperception, thus, is a prime and outstanding candidate for an attempt at reconstructing fundamental conceptualizations in Wundt's psychology.

Association and Apperception

Wundt aligned only partly and critical with the association psychology conceived by the English authors David Hartley, David Hume, Thomas Brown, and Alexander Bain, whose sensualism (empiricism) he rejected, just as Leibniz did before with respect to John Locke. Wundt argued that it is not primarily the frequency of repetition that is decisive for connecting homogeneous elements of consciousness and he considered the “four old association principles” (i.e. similarity, contrast, contiguity, and repetition) too simple and insufficient. As main forms of associative connections, he distinguished between fusion, assimilation, complication (i.e. the connection of impressions and feelings originating from disparate sensory representations), and assimilative and successive associations from memory. Compared to these elementary and passive association processes, apperception means that active and selective processes occur. The main forms of complex connections are synthetic, analytic, and combined apperceptions.

These definitions were elaborated further and also based on the experimental research performed in Leipzig (1911, pp. 500-554), and described by Wundt as follows: synthesizing and analyzing functions, the agglutination of ideas, and fusions (especially with linguistic forms) resulting in two possible consequences, namely, “*Verdichtung und Verschiebung*,” i.e. the condensation and displacement of ideas. (1911, p. 545). Such connections become richer by substituting a concept, analyzing functions of imitation, creating imaginative activity, and merging concepts. The terms “condensation and displacement,” which could already be found in the second edition of the *Grundzüge*, were later often used by Freud in his interpretation of dreams and other contexts to highlight unconscious primary *processes*.

Because of the permanent transitions between associative and apperceptive processes, Wundt did not strictly distinguish between these two types of psychological connections in his later work. Whereas in the process of simple association, in which elementary parts (e.g. the written letter and sound) are linked up, apperception refers to higher integrative processes. Thus, it is a matter of differences in complexity, because the apperceptive process is partly formed by expectations as well, and new qualities emerge from creative synthesis. The apperceptive connection is a higher-level process compared to associations, yet it is based on these, but not in a simple additive mode. “Moreover, it is a new structure, whose character is essentially determined by the relations in which the individual associative process is involved, and which they display to other apperceptive compounds of the same consciousness.” (1911, p. 499). The complex process of apperception should be differentiated into stages and partial processes. Further explanation and theoretical discussion of the apperceptive process is at the end of Chapter 5. *5 Wundt’s Theory of Apperception*.

Apperception psychology is not confined to its foundations in experimental psychology but constitutes a guiding principle of Wundt’s entire psychology. The autonomy of conscious processes and the principles of psychological causality are evident primarily in the integrative accomplishments of apperception. In *Cultural psychology*, Wundt refers quite often to his apperception theory. On the basis of this, he examined the shifts of cultural meaning and motives of many developments (Wundt, 1900-1920).

Consciousness and the Unconscious

At the beginning of his psychological studies, Wundt discussed (as Hermann Helmholtz also did) the *assumption of unconscious conclusions*. “The thorough analysis of psychological processes shall give us proof of the unconscious soul as the backdrop of the most important psychological processes. ... It could be made possible to descend into the secret laboratory where the thought has its unseen origin, and to unravel it into the thousands of threads of which it consists. I will demonstrate in the following investigations that the experiment is the primary tool in psychology that leads from the facts of consciousness to the processes that give rise to conscious life in the dark background of the soul.” (1863, I, p. V). Propositions with an analogue meaning can be traced back to Leibniz’s distinction between vague and clear representations, Kant’s reference to obscure (dark) representations, as well as to Schopenhauer, Fechner, and others (1874, p. 638).

It was in the second edition of the *Grundzüge* (1888, II, p. 204-205) that Wundt made it quite clear that the assumption of physiological processes was more appropriate here. Only conscious representations should be seen as real representations. Those that disappear from consciousness are only physiological (psychical) dispositions of their possible renewal.

The limits of consciousness determine the limits of our inner experience. Psychology considers the unconscious to be something transcendent, and it would never have a reason to investigate it, because the object of its investigations is the immediate psychological experience itself” (1894, p. 42). With respect to the controversy about unconscious psychological processes, Wundt was obviously aware from his knowledge of neurophysiology that brain functions remain largely unnoticed and that diverse non-conscious “dispositions” for psychological processes exist, such as reflex and instinct activity. Elsewhere, in describing the associative connections, Wundt judged that it is “completely arbitrary to make use of the ‘unconscious’; whereas it just depends on the question, whether or not the observer is able to remember the inducing representation. One might rather speak of ‘unnoticed’ or ‘quite vaguely conscious’ intermediate links of such associations.” (1911, p. 530).

“If consciousness is not a stage existing outside the processes on which these are moving, then the unconscious is even less of an invisible stage in which they are sunk as soon as they cease to be conscious, and it is impossible to think of a description of unconscious processes since we neither have means at our disposal to observe them – otherwise they would have to be conscious – nor can their alleged existence be reconciled with the nature of consciousness as the function of

connecting psychical contents. Such processes would have to make several connections of any kind if they were to have any meaning for our mental life; however, the essence of consciousness is the fact that psychical contents do connect. Thus, psychical processes may be more or less clear or vague according to the character of the connections. However, unconscious, in the actual sense of the term, could only become psychical elements existing outside of such connections, whereas the degree of awareness of psychical contents, as observation shows us, is more dependent on the relation to certain dominant and relatively constant contents than on the extent of the connections.” (1914, p. 120). “Assumptions as to the state of the ‘unconscious’ or any ‘unconscious processes,’ which are presupposed besides the conscious processes given by experience,” are not fruitful for psychology (1920c, p. 251). Wundt assumed, however, that the processes are not finished with the present experience, but that they are somehow in a kind of storage in order to be made available again – this is all that experience can tell us about unconscious contents of memory.

Reception and Comments

Unconsciousness

Araujo (2012) explored the question: “Why did Wundt abandon his early theory of the unconscious? Towards a new interpretation of Wundt’s psychological project?” Araujo examined Wundt’s early publications before the publication of the *Grundzüge* (1874), including his essays and textbook on physiology. Based on these sources, it can be understood why Wundt initially referred to the concept of unconscious conclusions, which he had taken up in parallel to Helmholtz in his main work. Simply put, Wundt originally felt it necessary to distinguish between the sensation, the act of perception, and the representation. This assumption was based, among other things, on the process of tactile perception, which seemed to require the assumption of a partial process, described primarily in psychological terms, which was then generalized by Wundt with regard to perception as a whole. This process, for example, has a “logical” form as an “unconscious logical conclusion” (or an unconscious inferential process in a logical form). On the basis of Wundt’s subsequent work, Araujo analyzed the gradual distancing from this concept, the question of “pure” sensation and synthesis, the increasing limitations, the status of a mere analogy, and finally the abandoning renunciation of the postulated “unconscious.” Eventually, Wundt even abandoned the term perception (“Wahrnehmung”) because he thought *sensation* and *representation* were sufficient and more precise.

Araujo examined this theoretically and methodologically interesting stage of development in Wundt’s conception in great detail and elaborated it more convincingly than other authors (*The logical theory of the mind and unconscious inferences* 2016, pp. 36-45). There are undoubtedly numerous terminological difficulties with the term “unconscious,” which can mean unnoticed, latent, temporarily unactualized, incapable of conscious awareness, automatically processed, or inferred. Due to his strict concept of science and his deep skepticism about introspection and other unreliable methods, Wundt had to reject theoretical constructions for which there could be no direct methodological approach. Such propositions were even more inappropriate for the new scientific psychology than naïve introspection (Araujo, 2012, 2016; Fahrenberg, 2015a; Mausfeld, 1994b; Richards, 1980).

Wundt wrote that Freud’s *Traumdeutung* (1900) would be “unaligned with experimental psychology” and “a real product of a renaissance of ancient dream mysticism in modern form, equipped with hysteria and sexual psychology” (1911, p. 636). Such reservations towards the affirmation of the “unconscious” could have been influenced by the contemporary philosophy of the unconscious and Wundt’s own well-founded criticism of spiritism and hypnotism. In Leipzig, Wundt was involved in a controversy with Zöllner and with Ulrici about spiritualistic phenomena. Both had arranged for a series of séances with the American medium Henry Slade in 1877. Fechner regularly participated, while Wundt and the Leipzig physiologist Ludwig participated only once (Bringmann, Bringmann and Bauer, 1990; Fahrenberg, 2011, pp. 310-314; Marshall and Wendt, 1980). It is likely that Wundt’s critical books on spiritism (1879) and hypnotism (1892) were motivated by these events.

Apperception

The term “apperception” was formed in analogy to mere “perception,” as well as in the “ambiguous sense of self-consciousness, ego/I and personality” as introduced to philosophy by Leibniz (Janke und Herrmann, 1971, pp. 448-455). Leibniz’s distinction between perception and apperception has found manifold interpretations from philosophical as well as psychological points of view, yet often it is not clear whether the origin of these thoughts from the *New treatises (Nouveaux essais, 1701-1704/1765)* had been recollected. These essays already contained a chapter on “The association of ideas” (Book 2, Chapter 33). In any case, the priority of Leibniz’s discussion of association to the *English associationism* seems to be largely forgotten (Verhave, 1967).

For instance, Leibniz described how a dog associates fear of punishment with the mere presence of a stick. Verhave (1967, pp. 111-112) pointed out that Leibniz aptly described the psychological law of *association* in his *Nouveaux essais* (1765, 2, 33) even before the members of the British empiricist school attempted to give a systematic account of associative learning.

Feelings of tension and relaxation have a special significance because they are features of the general apperception of conscious[ness] contents, i.e. of the necessary attention factor. They are “connected with the more central elements of those simple conscious processes, whose subjective/individual complements are the simple feelings” (1910, 1 p. 346). According to Wundt, three aspects can be used to compare manifold emotional conditions: high and low pleasure, excitation and depression (“Beruhigung”), and tension and release (“Lösung”) (cf. Chapter 3. 5).

The philosophical concept of apperception has been developed further by the thought of Wolff, Baumgarten, Kant, Fichte, and Hegel, and Herbart adopted it for his *Psychologie als Wissenschaft, neu gegründet auf Erfahrung, Metaphysik und Mathematik* (Psychology as a newly founded science based on experience, metaphysics, and mathematics, 1824/25). Wundt criticized the metaphysical presuppositions and pure self-observation in Herbart’s alleged empirical psychology. According to Herbart, apperception is the process in which representations enter consciousness and link up with other, previously acquired chains of representations. Wundt (1908, p. 7) mocks both the intellectualistic mechanics of representations, i.e. the displacement of the apperceived and the bulk (“Massen”) of existing representations, as well as the central role that Herbart assigned to intellectual (cognitive) representations, instead of integrating with feelings and volitional activity.

An extensive overview of the discussion at that time, including a review on Herbart’s apperception psychology, was conveyed by Lüdtke (1911; see also Janke 1971; Messer, 1928). Lüdtke pointed to conceptual and empirical vagueness and contradictions in Wundt’s apperception psychology but refrained from discussing the empirical-psychological research. Ziehen (1893, 1896) maintained a radical position by stating that the association theory developed by the English authors would be much more sufficient and Wundt’s apperception psychology mostly unnecessary. Because of Wundt’s assumption of an active voluntary control, Ziehen designated this kind of apperception a “Seelenvermögen” (a capability of the soul), and thus a metaphysical presupposition. Furthermore, he simply denied the localization of the apperceptive functions in the frontal cortex, assumed by Wundt, because the frontal cortex in his belief does not perform this function.

The expansion of empirical psychology since Wundt’s research program can be seen in a 700-page volume entitled *Aufmerksamkeit* (Eds. Neumann and Sanders, 1996) in the German *Enzyklopädie der Psychologie* (Eds. Birbaumer et al., 1983-2009). Wundt’s definition and theory of *attention* are reviewed there, but his original conception, and even the fundamental terms *Apperzeption* and *Apperzeptionstheorie*, are missing from the index. The term *apperception*, which was widely used at the turn of the century in 1900, has become uncommon in today’s psychology. While Wundt is seen as the founding father of experimental psychology, his central theoretical conception is mostly ignored, and his theory of apperception has disappeared almost completely from the psychological literature. However, the German *Dorsch Lexikon der Psychologie* (18. ed. by Wirtz, 2019) contains an article on *Apperzeption* that refers to Leibniz and Herbart and presents a short account of Wundt’s theory of apperception and its essential terms and propositions. The APA dictionary defines apperception as “1. The mental process by which a perception or an idea is assimilated into an individual’s existing knowledge (apperceptive mass). See also tendentious apperception. 2. The act or process of becoming conscious of a perception, so that it is recognized and understood. In apperceptive forms of visual agnosia, this ability is lost or impaired.” (2015, p. 69). – This definition clearly follows Herbart’s doctrine. Leibniz, the original author, and the empirical research by Wundt are omitted, which represents a kind of “systematic agnosia” in the history of psychology.

The later criticism of Wundt’s so called “Elementenpsychologie” (explanation by reduction to simple elements) has several roots (cf. Chapter 4; Fahrenberg, 2011). Wundt thoroughly described “psychical elements” and “compounds” in the *Grundzüge* (1874; 1908, 398-419), and the strategies of experimental psychology had the intention of differentiating the apperception process as well. Wundt explained the connection of elements, which produces something new, in analogy to the chemistry of compounds (actually he spoke of a “psychical chemistry,” just like James Mill did). However, with regard to the increasing knowledge of chemical compounds, he discarded this analogy to the natural sciences as fallacious (*Probleme der Völkerpsychologie*, 1911a, p. 150-151). It is obvious that psychological research must attempt to analyze highly complex processes, but Wundt expressed the following warning: “The psychical elements are pure products of conceptual abstraction, ... but they are contents of immediate perception themselves, so ... actually objects of vivid character” (p. 401). The constant flow of consciousness essentially restricts psychological analysis and abstraction. Wundt constantly emphasized his interest in psychical *connections* and *syntheses*, or to use a modern term, “dynamic integration.” His original achievement was the transformation of the idea of perception and apperception into a program of empirical research. How could this epitome of conscious activity be defined in psychological terms and examined experimentally? Wundt’s conception of apperception differs from Herbart’s intellectualistic views as well as from Kant’s “original synthetic unity of apperception.” To begin with, Wundt’s theory of apperception referred to the *active* control of attention (*Aufmerksamkeitszuwendung*), which was then extended to the psychical (apperceptive) connections of sensory impressions, representations, feelings, and volitional activity, and it included the meta-psychological understanding of (self-)consciousness as the highest synthesis.

Introducing the current concept of *cognition* (“perception, recognition, and thinking”) instead of *apperception* would be misleading, not only because cognition appears to be a highly ambiguous generic phrase, but because Wundt’s theoretical construction appears to be more meaningful than most of the current conceptions of “executive controls”, “central information processing”, “attention control processes,” and “intensity and selectivity aspects of attention” etc.

Wundt's apperception theory serves as an outstanding example of how the conceptions of a pre-eminent philosopher and universal thinker, i.e. Leibniz's thought about perception and apperception, consciousness and willing (appetitus), the psychophysical parallelism and the perspectivity of thinking, can be transformed by a psychologist and neurophysiologist into empirical psychological concepts, and partly operationalized for experimental research that strives to understand the highest integrative process as evidenced in consciousness and voluntary action. For decades, Wundt elaborated in his apperception psychology the fundamental theory of his work connecting sensory psychology, neuropsychology, general psychology, and cultural psychology.

Generalized Theory of Apperception

The term apperception refers to a complex structure of hypotheses related to the integrative process in conscious activity and the central regulative, volitional activity. In psychology, this multimodal process can be described with regard to gradual differences in clarity and intensity of awareness, range (span), and type of connection. The directing of attention is either a mere reaction or voluntarily directed, and it relates to intentions and emotional tones. Wundt was highly concerned, theoretically and methodologically, with questions as to how to differentiate this process in its course and in the emergent psychical outcomes, and how this central process could be made accessible using experimental methods, at least in part. Thus, selective attention control and the complex apperception process should be interpreted as a cognitive, emotional, and volitional performance of integration, which comprises the initiation of action. Wundt conceived consciousness as a synthesis (integration) of partial processes and developed a wide-ranging research program, but often this lacked suitable methods and operationally defined concepts. However, the heuristics of this demanding empirical approach is obvious.

The central role given to the apperceptive process in Wundt's psychology suggests an attempt to reconstruct his *theory of apperception* in modern terminology should be made. To be precise, a comprehensive representation or even a structuralist reconstruction are unrealistic because of the wide scope of his theoretical statements and the overwhelming amount of empirical research published from the laboratory in Leipzig. Since Wundt's theory aims at explaining the voluntary control of action and also the highest integrative representation (synthesis) in (self-)consciousness, it might be interesting and worthwhile to examine essential concepts and their relationship to his multi-referential theoretical conceptualization in more detail (for further discussion and some steps towards reconstruction see Chapter 5. 5).

3. 5. 4 Psychology of the Will (Wundt's Theory of Volition)

"There is no field of psychology in which the inclination to make statements about the content of psychical processes is not based on these themselves, but on some popular or philosophical anticipations – and plays a larger and more fatal part – than in the theory of volition ("des Willens")." Wundt intended to describe the separate processes, which we "sum up as the *will* or the *volitional activity*" in a way that corresponds to our immediate experience (1911, p. 221). On this basis he discussed some of the traditional theories of volition and stated: "In contrast to this, we recognized the drive ("Trieb") as the basic function of psychical processes. The original expressions of life are instinctual actions or drive ... and drive actions (Triebhandlungen), triggered by a sensory impression, in which a representation, feeling, and volitional act combines into a whole." (*System*, 1919b, II, pp. 165-166). Volition is an independent and original fact of the immediate experience, i.e. it is not a function that is merely added to sensations, feelings, and instincts, and rooted in these, but it is already contained in them. For Wundt, the origin of developmental dynamism is to be seen in the most elementary expressions of life, which can be described psychologically in reflexive and instinctive activity. Starting from this, he constructed a continuum, leading from controlled attention, the apperceptive process, and voluntary, selective acts, up to common cultural achievements and ethical decisions.

Apart from his original apperception psychology, the psychology of volitional processes is the second characteristic of Wundt's psychology (1911, pp. 221-295; 1920, pp. 219-245). Today, one would use "general theory of motivation" as a more appropriate term instead of Wundt's "theory of will." First, he explained the general concept and then he described reflexive activity and instinctive and voluntary movements in detail. It is a matter of *individual* volitional processes, not of an *abstract* will, because "every time and everywhere, there is a concrete actual willing ... But what we are perceiving in such an individual act of will is a change in a feeling that is combined with a more or less distinct process of sensations and representations.." (pp. 221-222).

Wundt started by distinguishing between three basic forms: "Thus, we want to consider the three forms, namely, instinctive acts, voluntary acts, and selective acts as stages of a developmental line." (p. 233). The instinctive acts are dominated by feelings of pleasure and displeasure, triggered by external stimuli; feelings of decision are more important in voluntary acts and selective acts; 'intellectual feelings,' like the feelings of decision or doubt, also take part" (p. 233). Two basic drives are assumed, namely, self-preservation (i.e. nutrition and protection) and preservation of the species (i.e. sex drive as well as parental and social drives). The development of concomitant feelings and affects are also discussed.

Wundt described the typical course of volitional processes and their ending as “release of will,” comparing it to the “release of affects.” He reviewed the wide variety of volitional phenomena: instinctive actions, drive and desire, sensual or higher drives, survival instincts and generic instincts of species, simple and compound voluntary acts, selective acts, and expressive movements stemming from instinctive and voluntary activity. Among the volitional processes, in the widest sense, he distinguished between elementary reflex activity, simple instinctive movements, the mechanization of voluntary acts by training, voluntary movements and compound voluntary acts. From Wundt’s point of view, volitional processes have a central integrative function, and are closely linked to feelings, most distinctly to the affects. External conditions, which contribute to terminating the affect itself, result from volitional processes connected to intense affects.

The section on instinctive, reflexive, and voluntary movements, contains elaborated descriptions of drive and instinct (pp. 235-260, also on animal psychology), automatic and reflexive movements, and the development of instinctive and voluntary movements. In another section, Wundt deals with the expressive movements, which are described together with their related feelings and physiological innervation (referring to Darwin, Piderit, and others). Wundt pays tribute to Darwin, who gathered extensive observational material among animals and humans, which made it seem probable that hereditary transmission would play a significant role. Wundt cited Darwin’s principles of classification of the main forms but did not yet consider these principles to be a psychologically sufficient analysis (pp. 269-271). With regard to the third principle, i.e. the relationship between movement and sensory representation, Wundt is encouraged to consider how “the affective expression immediately corresponds to the expression of thoughts, whose simplest form is sign language, and from which emerges sound language as a developmental form of a specific class of gestures.” (p. 271). Characteristics of volitional acts are feelings of activity and sensations of tension as well as feelings of decision and fulfillment. In this respect, they are similar to affects and their course (“release of affects”). In particular, the feelings are preparatory and accompany phenomena of the will, in which the direction of the volitional act is indicated. Connections between thoughts and feelings that immediately prepare an action are called motives: “Motives are firmly amalgamated contents of representations and feelings in the volitional process” (p. 230). The chapters on the psychology of volition in the *Grundzüge* end with a section on the “theory of will.” Here, Wundt refers to older theories of the will and their philosophical presuppositions. (pp. 271-295). His distinction between “intellectualistic” and “emotional” theories of the will resulted from this discussion. Shorter sections on affects and volitional processes can be found in the *Grundriss* (1920, pp. 203-245).

In the volume *Recht* (Law) of the *Völkerpsychologie* (1918, vol. 9, pp. 219-367) there is also a lengthy chapter entitled *Die Entwicklung des Willens* (The development of the will). Wundt described the various forms and stages of volitional and instinctive activity, their time course in consciousness, as well as the psychical unity with the accompanying affect and the physiologically recordable excitation. After a section on the “will as simple activity,” he examined the will as an act of purposeful logical thinking, and more extensively, the psychology of volitional processes. Here, he contrasted the individual will with the emergence of the common will from the combination of individual wills and as a product of history. With the concept of the “Rechtswille” (juridical will) and the discussion of freedom and responsibility, he establishes a connection to the construction of legal order. Particularly in the section on will (pp. 244-301), there are thoughts and references to complement the chapters on volitional psychology in the *Grundzüge* (1911), published seven years earlier. He extensively discussed the will as a purposeful sequence and as being “insofar a logical thinking activity.” Thus, Wundt opposes Schopenhauer’s and Hartmann’s (1900) conception of an unconscious will (p. 277). Once more, Wundt provides reasons for the fundamental epistemological importance of the principle of purpose in psychology and in *ethics*. It is a matter of the “birth of purpose from will” (p. 285).

Wundt opposed various theories of law and quoted Mommsen’s phrase “From self-defense and self-revenge to common protection and public punishment.” With regard to motives, Wundt suggested a modification: “From exclusive concern for one’s own welfare to the commitment to the community and to the subordination of one’s own will to the objectives of the common will.” (Preface, p. XIII). In spite of the shortcomings of Wundt’s psychological and historical explanations, his intention was to contribute to the “psychological developmental history of juridical order.”

The following statements, again, point to the fundamental importance of volitional activity: The personality is the “unity of feeling, thinking, and wanting, in which the will appears as the bearer of all other elements” (*Ethik*, 1886, p. 385). Personality means a “self-conscious being acting with a consistent and selective will,” which includes “the freedom and responsibility of the will” in an ethical sense (*System*, 1919b, 2, p. 201). From Wundt’s point of view, man’s character, formed by personal experience, defines volition and voluntary acts. Our *will* is an empirical and individual will that unites self-awareness, volition, and activity.

Just as the principle of emergence can best be demonstrated with respect to the apperception process, so the theory of motivation elucidates the principle of purpose and the potential conflict between “intended and unintended consequences of actions.” Consequences of actions are effective beyond their originally assumed purpose, thus inciting new motives with new effects. The intended purpose always leads to side and subsequent effects, which might become purposes in their own right. This culminates in an ever-growing organization through “self-creation.” Wundt was the first to formulate this principle, which he named “the principle of heterogeneity of purposes” (see Chapter 3. 8).

Reception and Comments

Will and volitional activity are of fundamental importance to Wundt's psychology. Contemporary reviews pointed out the voluntarist tendency or explicit voluntarism of Wundt's psychology. The evolutionary point of view with reference to Darwin was still unusual to psychologists at that time. Consequently, Wundt's views were seen as "universal evolutionism" (Jodl, 1894, p. 206; see also Nef, 1923) and his theory of motivation provoked critical comments, including the reviews of Pongratz (1984), Schönplflug (2013), and others. However, the distinction between intellectualism–voluntarism used by Wundt has been adopted by other authors (see Borsche, 1976, vol. 4, pp. 441-444).

Wundt explained and defended his viewpoint in the preface to the second edition of *System der Philosophie* (System of philosophy): "Others not only emphasized that my psychology was in essential points in accordance with the philosophical views put forward in the *System* – what I consider understandable – but concluded that my psychological views depend on my metaphysical view, which I understand less, or even that I might try to spoil psychology with metaphysics. On the contrary, I would conclude that the empirical results gained by my psychological research have had an impact on my philosophical views. But I have to concede that if it is considered axiomatic that a metaphysical system has to evolve uninfluenced by any single piece of knowledge, such as by a scientific *generatio aequivoca* [spontaneous generation], then there is not much to object to that opinion. Indeed, I believe that it makes a difference where one begins and ends up. Since I started in the natural sciences and came to philosophy by working in empirical psychology, it would seem impossible to me to philosophize differently than in accordance with methods that match the scale of such problems. But I understand very well that things might look different for anyone who starts with philosophy and occasionally takes excursions into the fields of natural sciences and psychology, or perhaps also for anyone who looks for support in any of the existing metaphysical systems with respect to a special field of application like psychology" (*System*, 1919b, 1, p. IX-X).

Wundt's impact on later theories of motivation is difficult to evaluate since he is rarely quoted in this respect, neither in contemporary textbooks, nor in recent ones, except with the label "voluntaristic." Actually, one might have expected otherwise since in the philosophical thought of the second half of the 19th century there were marked tendencies towards voluntarism and metaphysics of the will. However, just like with some other topics, there are some analogies to Wundt's views to be found in Freud's psychoanalysis and metapsychology (see Fahrenberg, 2015a, p. 310-314).

The inspiring potential of the *principle of heterogony of purposes*, which stated the emergence of unwanted side-effects and which refers to a kind of unintended "self-creation," was appreciated by Bloch (1956), Graumann (1996), Janich (2006), and a few other authors (see Chapter 3. 8 for further explanations, Fahrenberg, 2013a, pp. 249-288). In the Anglo-American literature, Wundt's heterogony of purposes is next to unknown.

Wundt's psychological and metaphysical voluntarism – in connection with his process theory – could be interpreted as a fundamental definition of life as such, i.e. of all active changes, and especially of the highest synthesis of accomplishments in individual consciousness and cultural development. By postulating instinctive and volitional activity as the basic functions of the psychical process, Wundt opposed the widespread assumption that placed priority on thinking and reflection. He contradicted Herbart's claim that feelings and affects only develop from cognitive representations (ideas), and he gave an ironic account of Herbart's "mechanics of cognitive representations" (*Grundzüge*, 1874, pp. 790-792), whereas his theory of motivation comprises a variety of phenomena, from elementary biological activity to purposeful directed acts, and his theory of apperception explicitly aims at integrating the current process of thinking, feeling, and willing. Much of Wundt's criticism regarding the intellectualistic orientation of Herbart still appears valid with respect to the current inclination towards cognitivism, i.e. one-sided cognitive psychology.

Theory of motivation is the preferred term here since Wundt's theory of will (volition) comprises the entirety of activities, from reflexes and instincts to purposeful volitional acts. Thus, it considers biological evolution and cultural development a creative performance of many volitional activities. Wundt interpreted mental-cultural development and biological evolution as a general process of development, although he rejected the abstract ideas of entelechy, vitalism, and animism, and he did not want to follow Schopenhauer's (1859) metaphysics of the will under any circumstances (1911, pp. 702-721). The fundamental importance of volition for Wundt's work, besides apperception theory, can be discerned in the extensive portrayal these topics received in the revised editions of *Grundzüge* (6th ed. 1908-1911), *Ethik* (4th ed. 1912a, vol. 3, pp. 1-74), and *Völkerpsychologie* (1918, vol. 9, pp. 219-367). Wundt's conception included the biological, evolutionary perspective and the perspective of cultural development as a creative achievement consisting of many volitional activities. Eventually he extended this volitional psychology to a metaphysical idea yet emphasized the independence of the psychological-empirical level. Both aspects of human development, the intellectual and the volitional, became evident in Wundt's work, e.g. his theory of mental development and the interpretation of developmental dynamism as a consequence of a volitional-instinctive, biologically-based evolution. "The original expressions of life are instinctive acts triggered by a sensory impression," combining ideas, feelings, and volitional acts into an integral whole (*System*, 1919b, 2, pp. 165-168).

For Wundt, the "bearer" of the continuous psychical process cannot be a "soul," an ego/I, or another psychological-philosophical structural concept, but nothing other than a general and variable psychical function because of the stated characteristics of *psychical processes*. The dynamism stems from the basic function of volitional activity. Wundt assumes – just

as Leibniz with the striving (*appetitus*) did – that there is self-activity and dynamism in the apperceptive syntheses. This activity already appeared in the intentional control of attention. Following Leibniz, Wundt rejected Locke’s sensualistic claim of a *tabula rasa*, and also opposed elementary (reductionist-mechanistic) association psychology.

In combining his motivation theory oriented towards empirical research with a philosophical-voluntaristic tendency, Wundt crossed the borders of empirical science towards metaphysics and ontological ideas. Metaphysical voluntarism views reality as “an infinite totality of individual volitional units” whose interaction constitutes the developmental principle of the will itself. The world is not constituted by a will, but by a gradual succession of volitional units, which are not monades (i.e. “substances” separated from each other according to Leibniz), but “actuality,” i.e. ultimate entities of the will and activity interacting with each other (*System*, 1919b, 1, pp. 417-423). It can be concluded from Wundt’s comments that he was well aware of the risk of mingling empirical psychology with metaphysical voluntarism, although it remains doubtful as to whether such a mingling could be avoided and whether Wundt adequately succeeded in doing so.

From today’s point of view, Wundt’s theory of motivation may appear to be one of the rather difficult parts of his psychology. Access is facilitated by distinguishing between levels of psychological description and theoretical conception as well as between psychological and philosophical (metaphysical) views:

- (1) Experimental psychology in which the elementary control processes directing attention and selective acts (e.g. choice reaction tasks, etc.) were examined with the methods available at Wundt’s time;
- (2) The psychologically scrutinized exploration of volitional phenomena, from instinctive activity to intentional acts according to purpose, values, and ethical norms;
- (3) The comparative psychological assessment of cultural development, which is directed by many *developmental motives*;
- (4) The biological theory of evolution and the philosophical position of evolutionism;
- (5) The reflection on philosophical presuppositions of any motivational theory with respect to intellectualism and voluntarism, determinism, and freedom of will.

3. 5. 5 Feelings and Affects (Theory of Emotions)

The psychology of feelings and affects, with the related methodological considerations, takes up a large part of the *Grundzüge*. The differences in quality and intensity in the temporal course of elementary feelings are thoroughly explained. Wundt described *elementary feelings* and discussed how they are distinct from the qualities of sensory impressions and abstract representations. Actually, feelings are elementary *aspects* or components of higher integrated “compound” processes. This explains the division into the following chapters: *Gefühlselemente des Seelenlebens* (Emotional elements of psychical life) and *Gemütsbewegungen und Willenshandlungen* (Emotional activation and volitional acts) (*Grundzüge*, 1910, pp. 274-383; 1911, 3, pp. 98-220). In the first chapter, elementary feelings are distinguished with respect to their intensity, quality, and temporal course. The next chapter deals with affects and feelings that are associated with thoughts or ideas (*Vorstellungsgefühle*), e.g. aesthetic feelings, for instance with respect to a harmonic sound. The compound intellectual processes might be accompanied by feelings of doubt or contradiction. In addition, there are feelings related to the self, compassion, and religion.

“We have two methods at our disposal, namely, the *method of impression* and the *method of expression*. . . Both methods are ‘psychophysical’ since they require physical tools” (1910, p. 274). The impression methods correspond to those of psychophysics and consist of the method of varied impressions with constant conditions and the method of constant impressions. They are called methods of direct impression and mainly use simple impressions of sound and light, olfactory substances, and other sensory stimuli. The methods of impression based on subjective comparisons require, unlike in psychophysics, longer test series with planned variations of the sensory contents. The *reproduction method* intended “for the arbitrary production of impressions that stimulate feelings,” uses psychologically more complex conditions, for instance presenting arithmetical problems or inducing emotional states by suggestion. In contrast to this, the expression method records “changes in the innervation of respiration, heart, and blood vessels.” But this procedure always requires “knowledge of the related subjective phenomena” (1910, pp. 274-276). The devices for these recordings are depicted and explained (pp. 278-294), and include the kymograph, pneumograph, and plethysmograph for respiratory and cardiovascular functions, as well as other devices with special functions, such as the ergograph (Mosso), *Schriftwaage* for recording speed and pressure of handwriting (Kraepelin), and a recorder for reflex activity (Sommer).

Applying the method of impression, i.e. the analysis of subjective feelings, Wundt derived three dimensions of basic feelings, namely, pleasant and unpleasant, tense and relaxed, excited and depressed (resp. of pleasantness-unpleasantness, arousal-relaxation, tension-release). He conceded that these dimensions might be independent of each other or “cross” each other. Illustrations show that Wundt assumed the existence of a neutral position for all three dimensions. He expressly considers his scheme to be an analogy to the “multi-dimensional system of sensations . . . , the sensations of light according to hue, saturation, and brightness” (p. 318).

Wundt discussed theoretical aspects of the affects, which generally show a high degree of excitation and standard dynamics of the temporal course, and furthermore, are to be characterized by accompanying (cognitive) representations, which in turn could have an even more amplifying influence on the affect. Affects have a typical temporal course called affect release (pp. 191-199). Wundt transferred his classification of feelings to the affects, but here he used only two dimensions, distinguishing between pleasant and unpleasant as well as tense and relaxed. In this way, he arrived at classifications of joy, melancholia, sadness, grief, disgust, anger, rage, hope, surprise, fear, anxiety, and startlement, etc. (p. 211). Numerous illustrations depicting curves of breathing and pulse volume (adopted from von Gent, Lehmann, and others) are used to demonstrate the differences between the affects and their respective courses. An overview of existing theories of affects, including Darwin's contributions, concludes the chapter.

Another aspect of Wundt's theory of emotions remains methodologically significant. The "principle of psychical contrasts" (also called "amplification of contrasts" or "development in contrasts," see Chapter 3. 8) is one of the methodological concepts that constitutes Wundt's *system of principles*. The modus of *progression in contrasts* can be observed in visual sensations as well as in the phenomena of emotional life since they can be arranged according to contrasts like pleasant and unpleasant, excitation and depression, and striving and reluctance. In terms of their mutual relations, these forces could strengthen each other, which is obvious in the transformation of feelings and affects into their opposites (e.g. "love and hate"). Since all psychical processes include emotional and volitional components, this principle applies to all of them, even the intellectual ones (*Grundzüge*, 1902-1903, III, p. 785, *Grundriss*, 1920c, pp. 402-403; *System*, 1897a, pp. 597-598).

Reception and Comments

The first person to criticize Wundt's three-dimensional classification was Titchener (1899), who was familiar with this conception from his studies in Leipzig. One of his objections was that the three dimensions (i.e. pleasant and unpleasant, tense and relaxed, excited and depressed) are not consistent, being partly bipolar, partly unipolar. Wundt (1899) replied extensively by referring to the results of psychophysiological registrations and other considerations. Perhaps Wundt's three-dimensional scheme has become so well-known because it attempts to structure a particularly indefinite field of research using a metrical approach. It resembles the subsequent factor analytic research, and actually some investigators have tried to structure self-reports on emotional states using factor analysis.

Many researchers in Germany and the US were inspired by Wundt's three-dimensional theory of emotions (Osgood, Suci and Tannenbaum, 1957; Bottenberg and Dassler, 2002; Schönplflug, 2008 (p. 72); Traxel, 1983; Woodworth and Schlossberg, 1971), and his conception is briefly referred to in most handbooks and in comparison to other taxonomies. More recent taxonomies of emotions are reviewed in the books edited by Janke, Schmidt-Daffy and Debus (2008), and Stemmler (2009). If Wundt's "theory of emotions" is mentioned in today's textbooks, it is mostly just his classification. The theoretical framework, especially his theory of apperception, and his methodological principles, have apparently been lost. The "three-dimensional theory of emotions" is not Wundt's only contribution to the research on emotions. He integrated emotional components into his theory of apperception, and he encouraged research on psychophysiological correlations (see Chapter 3. 3).

From today's point of view, it appears problematic to evaluate Wundt's theory of emotion and similar conceptions for methodological reasons. Attempts at stimulation of typical emotions under artificial conditions in the laboratory raise severe doubts about the external validity of such findings. Furthermore, assessments in the laboratory have shown that a multimodal strategy is required. As soon as emotions were assessed on the three data levels (i.e. self-report, behavioral data and facial expression, and physiological data), discrepancies became obvious in such psychophysiological studies based on *ambulatory assessment*, and the fundamental difficulties in theoretical assumptions and methodology are still under discussion (Myrtek, 2004; Stemmler, 2009; Wilhelm and Fahrenberg, 2018).

Everyday observation supplies telling examples of Wundt's *contrast principle*, for example when moods shift or exaggerated affects transform into their opposites. Furthermore, Wundt's *context principle* is also suitable to use to interpret emotions observed in others. In some instances, neither the behavioral changes observed in facial expressions and gestures, nor verbal self-reports are sufficient to conceive of and understand the given emotional state, thus making additional contextual information about the current situation and social interaction necessary.

3. 5. 6 Strategies and Methods in General Psychology

This section intends to look back at the methodology in the laboratory in Leipzig, and especially at the problems arising from self-observation. The epistemological postulates they are based on, as well as the discussions on *measurement theory* and the *principle of psychical causality* are presented in Chapter 3. 8. The controversy about the validity of the self-observation method and the considered opinion that its deficiencies might be controlled in psychological experimentation will be discussed here in their general aspects (cf. the extensive discussion in Fahrenberg, 2011, 2015a).

Wundt even proposed the extension of *experimental* methods into the “purely psychological field,” and he thought, referring to Fechner’s psychophysics, that “in the meantime, the sensory aspect of psychical life offers the widest prospects for experimental examination” (1862, p. XXIX). A further advance would come about by itself, but it is up to further experience to explore the scope of experimental methods. Thus, this approach aligns with the model of the natural sciences, and consequently it leads to the question of whether or not sensations and compounds might be differentiated and adequately measured given the *continuous* psychical process. Wundt was convinced that psychology, as an empirical science, would have to strive for systematic procedures, replication and validation of findings, and a critical attitude regarding its own methods. Thus, *pure self-observation*, the “*inner perception*,” is completely inadequate. Rejecting this naïve introspection, he recommended the *thoroughly trained* self-observation obtained under experimental conditions. Wundt (1907b, p. 301) set up a standard definition of psychological experiments based on systematically varied and repeated conditions.

Trained Self-Observation Under Systematically Controlled Conditions

“All psychology starts with self-observation ...” (1862, p. XVI). This early statement by Wundt might have been referring to introspection, but actually it does not, since Wundt makes a strict distinction between “pure” (i.e. subjective, naïve) self-observation and trained, controlled self-observation. “The experimental method just wants to eliminate this alleged self-observation that believes itself able to make statements about psychical facts immediately and without further rules, but inevitably must be subject to the greatest self-deception. In contrast to such a subjective method based merely on inexact inner perceptions, the experimental procedure intends to allow for valid self-observation by exposing the consciousness to precisely controlled objective conditions. But, eventually, the value of the method must be judged by its success. However, the failure of the subjective method is obvious, because there is no single question about which its proponents would not widely disagree” (1874, p. 8). Wundt did not take this widely propagated method of naïve introspection for a serious scientific method, but rather for an occasion for speculative psychologizing. He considered this approach completely inadequate and calls spontaneous, narrative, and untrained self-observation a source of self-deception. Furthermore, there were no instructions or rules for this method to be found, which is due to the simple reason that self-observation is impossible in a scientific sense. Auguste Comte would have urgently pointed to the flaws of so-called self-observation (*Logik*, 1921, p. 163).

The critique of self-observation as a method of psychological investigations goes back, above all, to Kant, although this is no longer well remembered. His short, yet concise, arguments are listed in the *Vorlesungen zur Anthropologie in pragmatischer Hinsicht* (Lecture on Anthropology from a pragmatic point of view, 1798). On the one hand, Kant’s remarks refer to the inner experience, and on the other hand, to the observation of humans and their “Tun und Lassen” (“doing and not doing”) in the world. He considered psychology a *descriptive* science, not an *exact* science. His fundamental doubts concern two things, namely, that the validity of self-observation is questionable, and that its exact measurement for the purpose of mathematical formulation of psychical functions is impossible.

“However, all such attempts to arrive at such a science with thoroughness encounter considerable difficulties that are inherent in human nature itself.

If a human being notices that someone is observing him and trying to study him, he will either appear embarrassed (self-conscious) and cannot show himself as he really is; or he dissembles and does not want to be known as he is.

Even if he only wants to study himself, he will reach a critical point, particularly as concerns his condition in affect, which normally does not allow dissimulation: that is to say, when the incentives are active, he does not observe himself, and when he does observe himself, the incentives are at rest.

Circumstances of place and time, when they are constant, produce habits which, as is said, are second nature, and make it difficult for the human being to judge how to consider himself, but even more difficult to judge how he should form an idea of others with whom he is in contact; for the variation of conditions in which the human being is placed by his fate or, if he is an adventurer, places himself, make it very difficult for anthropology to rise to the rank of a formal science. (Kant, 1798/1983, Preface, pp. BA X-XII, pp. 401-402; transl. by Loudon and Kuehn (2006, p. 121). The introductory chapter of his *Vorlesungen zur Anthropologie (Vom Erkenntnisvermögen; On the capabilities of knowledge)* contains further methodological objections. Kant warns against expecting too much from inner experience and points out to the real actions (“Tun und Lassen”) of man.

“With those inner experiences it is not as with the external ones or with spatial objects, where the objects appear as held side by side and enduring. The inner sense perceives the relations of its determinants only temporarily, i.e. in flow, thus no continuous contemplation, which is necessary for experience, can take place” (*Metaphysische Anfangsgründe der Naturwissenschaft*, 1786/1983, BA 15, p. 416). There are no fixed points in the continuous flow of consciousness; the relations can be defined only temporally and otherwise cannot be anchored. Elsewhere, Kant doubts that in general “another thinking subject submits to us in a way that is suitable for our experiments” (1786/1983, A X-XI, p. 15-16).

In today’s terms: everyday self-reports of behavior are distorted by the awareness of being observed and by the self-presentation it induces. Observation of one’s own psychical state is hardly possible, especially in the case of intense experiences,

which are likely to modify this state. The inner states and the flow of consciousness make it difficult to discern a constant point of reference. Psychologists are confronted with the following obstacles: method-induced reactivity, confusion about self-observation and self-presentation, systematic distortion effects of observation (and of the assessment of oneself and of others) affected by the individual's attitudes, inconsistencies (variability), sensory deceptions and errors of judgement, as well as doubtful compliance and possible reactance (reactivity).

Wundt (1874) only dealt with certain aspects of Kant's critique. In the introduction of *Grundzüge* he discussed how the flaws of self-observation could be mastered by training, experimentally varied conditions, and suitable control procedures. Based on Wundt's comments, it is doubtful whether he considered all of Kant's objections. Wundt remained convinced that reliable ("exact") self-observation of conscious processes is possible if a systematic repetition takes place with planned variation of conditions in a methodically controlled setting. In describing possible improvements of experimental self-observation, Wundt aimed at the practical level of laboratory methods, and less at Kant's level of operational and methodological criticism and epistemology, and not yet at the empirical level of today's studies on the reliability and validity of methods or the level of formal measurement theory in psychology.

In later editions of the *Grundzüge* as well as in *Essays* and *Logik*, Wundt discussed other critical aspects and possible control procedures, including *Über psychologische Methoden* (On psychological methods, 1883a), *Selbstbeobachtung und innere Wahrnehmung* (Self-observation and inner experience, 1888a), and *Über Ausfrageexperimente* (On questioning experiments, 1907b). In *Grundzüge* (1908-1911), mainly the experimental methods relating to *Intensität von Sinnesempfindungen* (The intensity of sensory perceptions) are explained in depth, whereas *Logik* contains two longer sections, namely, *Die Bedeutung der experimentellen Methode für die Psychologie* (The significance of experimental methods for psychology) and *Allgemeine Regeln für die Anwendung des Experimentes in der Psychologie* (General rules for the application of experiments in psychology (*Logik*, 1921, pp. 163-173).

Psychological investigations requiring only introspective reports were strongly rejected by Wundt as *Ausfrageexperimente* ("experiments based on questioning"). From his point of view, such experiments, especially those reported by Bühler (1907, 1908) on the psychology of thinking, are completely invalid since arbitrarily chosen individuals are examined with respect to their occasional self-observations, and in doing so the feelings associated with problem-solving may become an undermining factor. Furthermore, there is no chance for repetition. Bühler would have altered and diluted the experimental methodology in order to find new access to thought processes and other higher functions, and "in this way, it is possible to get information about the deepest and highest problems of human consciousness without worrying about complicated instruments and without caring for a remote control method" (p. 360).

In contrast to this, Wundt (1907b, 1908) demanded an advanced methodology of self-observation, and in his criticism of Bühler, he provided a definition of psychological experiment and rules of experimentation, which were later frequently cited. (For a further discussion, see Massen and Bredenkamp, 2005; Fahrenberg, 2015a; Ziche, 1999).

"(1) If possible, the observer should be in the position to determine the occurrence of the actual process to be observed by himself. (2) The observer, as far as possible, has to observe the phenomenon in a state of close attention and to follow its course. (3) Each observation has to be repeated several times under the same conditions in order to verify the results. (4) The conditions necessary for the occurrence of the phenomenon have to be established by varying the accompanying circumstances, and when established, they must be varied systematically in different interconnected experiments by eliminating them in particular experiments or grading their intensity or quality" (*Über Ausfrageexperimente*, 1907b, pp. 301-360).

"The researcher of nature can return to his object at will. Yet the psychologist can only return to an inner process observed under certain conditions, or if he artificially reproduces the conditions by means of the experimental method" (1921, p. 167). The value of an experiment depends on the success in making self-observation methodically reliable. It is an important precondition that the psychical processes do not occur spontaneously; they must be repeated on a schedule, for instance by using technical devices to stimulate sensations by physically defined stimuli or feelings by events or tasks, etc. Wundt first trained his subjects. Following Fechner, he referred to statistical distribution curves of the results as another means of control and considered regularities to be deducible only from the average values of many individual observations.

Wundt believed that the four basic rules for experiments could be realized, albeit more or less imperfectly with psychological experiments. In this chapter, Wundt described the manifold sources of error in psychological experiments, such as self-observation under adverse conditions with numerous undermining factors, suggestive effects, the uncertainty of memory, emotional influences, etc. Thus, experimental psychology can only come close to the ideal of "perfect experiments," because unlike in the natural sciences, the observer and objects observed are not independent of each other. Wundt conceded that psychical states are connected to each other in such a way that an isolating demarcation often seems impossible. Furthermore, he acknowledged that the reliability of the results is limited by various influences, including difficulties in repeating a psychological experiment and observing the subjective components, uncertainties in understanding and communicating about self-observations, and the uncertainty of memory (*Logik*, 1921, pp. 163-172). His retrospective statement that "not only the external technical procedures, but also the distinctive subjective art of experimental observation has to be learned and practiced" (*Logik*, 1921, p. 167) indicates that his own reservations are still present.

Commentary on the Social Psychology of the Experiment

By specifying the experimental controls, the systematic distinction between the investigator and the examined person was introduced in the laboratory in Leipzig, thus being a “social psychology of the psychological experiment” (Danziger, 1990). Whereas in experiments in the natural sciences, the roles of the observer are confined to the recording of measured values, in psychology it is a matter of the state of consciousness when responding to the stimulus. “The individual consciousness, being the object of investigation, had to be shielded from variable internal and external influences of unknown effect, which might distort the particular response that was of interest. So, it seemed desirable to get immediate responses that allowed no time for reflection and to keep the responding individual in ignorance of the precise short-term variations in the stimulus conditions to which he was to respond. (This is not to be confused with being ignorant of the overall purpose of the experiment which was definitely not thought desirable.) But this made it increasingly difficult for individuals to experiment on themselves without assistance” (p. 30). Also, the ever-increasing technical complexity of the experimental devices encouraged a division of labour: “The effect of these practical measures was certainly not foreseen and hardly noticed for several generations. What occurred in practice was the development of a fundamental difference between the social conditions of experimentation in the natural sciences and in psychology. In the natural sciences any division of labour within an experimental investigation was unconnected with the fundamental relationships of the investigator and the object of investigation. ... However, in psychological experiments one person would function as the repository of the object of investigation, of the data source, while the other would merely act as the experimental manipulator in the usual way. This meant that whenever this division of labour was adopted the outcome of the investigation was the product of a social interaction within a role system whose structure was intimately connected with the way which the object of investigation had been defined” (1990, p. 31) .

The change of theoretical framework had fundamental consequences. Instead of the self-experiments, which Fechner used to carry out, there was a separation of roles, even if most of the participants were assistants at the laboratory. Even in his later years, Wundt attached great importance to acquainting his doctoral students with laboratory methods and methodology in order to protect scientific standards and encourage improvement. Danziger argued that the decisive step was not the publication of his textbook, but the foundation of the laboratory, which enabled him to regularly conduct experiments with his advanced students.

Four Types of Methods in Leipzig

The experimental psychology in Leipzig was based mainly on four types of methods: *impression methods*, *reaction methods*, *expression methods*, and *reproduction methods*. In addition, the later editions of the *Grundzüge* contained many sections with descriptions of other methods. These methods also included special techniques for presenting sensory stimuli as well as for tasks, recording, and the entire test setting, to attain paradigms for standardized and repeatable observations of certain psychical processes. The findings were represented by means of simple descriptive statistics (e.g. frequencies, average values, dispersion, and average error). A testing of statistical hypotheses was not carried out because this methodology was not yet available. Wundt, being interested in the temporal course of psychical processes, used illustrations to depict typical changes (*Grundzüge*, 1908-1911). Although Wundt did not write a textbook on methodology, there is the elaborated chapter entitled *Intensität der Empfindungen* (Intensity of sensations) in the *Grundzüge* (1908, pp. 525-679) consisting of detailed presentations of research strategies in psychophysics and experimental and statistical methods as well as the manifold results from psychophysical research and theoretical conclusions. Other chapters of the *Grundzüge* contain small sections on the special methodology as well.

Impression Methods

In psychophysics and sensory psychology in general, the relationship between the strength of a physical stimulus and the intensity of the sensation experienced is assessed by numerous psychophysical measurement methods as well as by many variants of the methods of equal-appearing intervals, constant stimuli, limits, and adjustment (1908, pp. 29-31; 1910, pp. 274-278). The *direct* impression method refers to an immediate application of external stimuli. When stimuli like colors or odors are applied to induce emotional states in research on emotions, Wundt referred to this as an *indirect* impression method.

Reaction Methods

Wundt considered the methods now known as *mental chronometry* to be suited for experimental research on apperception, at least in some basic respects. The *reaction methods* merit a special position because at the time there were hardly any other empirical-analytical means of capturing the apperceptive process. This chronometry, already measured in milliseconds then, appears to have been important as proof of measurability and accuracy. The necessary habituation to the examination is secured through repetition, and memory distortions were controlled by making the intervals as short as possible between the psychical process and the act of recording. Helmholtz succeeded in measuring the velocity of conduction in peripheral nerves, e.g. in the arm, and Wundt was of course familiar with this laboratory approach. Inspired by the Dutch physiologists Donders and de Jaeger, these methods were further developed in Leipzig in order to dissect the reaction times for various tasks, especially more or less complex ones, into their constituent components, i.e. the perception of stimuli, the central processing time,

and the duration of the physiological processes of conduction and movement, including those of motor preparation and pressing a key. To be derived by subtraction were: the mere duration of apperceiving simple and also compound contents (thoughts), the additional time (compared to the simple reaction tasks) for selective reactions in choosing between several stimuli and between several response options, distracting attention, and also “times of differentiation and volition” while associating ideas (Wontorra, 2009). Before the discovery of the spontaneous EEG and the evoked potentials, these *complex reaction experiments* and chronometry were the method of choice to investigate the process of apperception.

Expression Methods

In the research on emotions, those physiological measurements are called expression methods, which objectively measure changes in psychical states and were not intended to investigate psychophysical causation. Wundt referred to the changes in respiration, heart rate, and the peripheral pulse curves, and he described these methods extensively with illustrations of the devices and numerous diagrams of recordings. Based on this, the temporal course of feelings could be distinguished, although an exact determination of the intensities was not expected.

Reproduction Methods

The reproduction methods are intended to recall thoughts or emotional states from memory. Later, for the experimental examination of memory abilities, the hit rate method (i.e. “Treffermethode,” previously introduced by Hermann Ebbinghaus) was also used in Leipzig. Here, the number of syllables correctly reproduced or re-recognized was counted (For Wundt’s research on memory, see Scheerer, 1980).

Other Methods

In several chapters of the *Grundzüge* there are sections about other methods of investigation, e. g. methods of investigating into the association process or assessing individual differences in achievements in reading, writing, and arithmetic, including Kraepelin’s working curve (1911, pp. 558-599). Neither the mental tests for the examination of intelligence, nor other performance tests relevant to differential psychology are reviewed by Wundt, in spite of the later research work done by his assistant, J. McKeen Cattell. Wundt, however, quoted the statistical correlations of mental performance tests developed in Leipzig by Spearman and Krueger (pp. 596-599). He acknowledged the importance of the analysis of communicative gestures and other expressive phenomena, as defined by Darwin, but he did not pursue an empirical project of his own. Volitional activity in its various forms and in its connection with thoughts and feelings is described throughout the *Grundzüge*. Wundt mentioned Ach’s book entitled *Über den Willensakt* (On the volitional act, 1910) and welcomed such progress in empirical psychology of volition. There were hardly any adequate research methods available for experimental research on *motivation* before Kurt Lewin’s studies and field research. Regarding the psychology of *thinking*, Wundt considered the psychology of language and its methodology (vols. 1 and 2 of the *Völkerpsychologie*, see Chapter 3. 6) to be the most fruitful path. He was also interested in the interaction within a community and between the individual and the community, as Graumann (2006) conceded, yet there were no methods available for their direct investigation.

Wundt criticized *questionnaire methods* because “the same importance is attached to the most thorough and the most unreliable statements.” ... “Sheets with some questions are sent ... to the highest possible number of people, the answers are collected, and then attempts to statistically process them are made. Actually, it is plausible that this method increases the shortcomings of usual self-observation without experimental control due to the inevitable misunderstandings and the indiscriminate use of good and poor, reliable and unreliable, observers. The application should at least be restricted to peripheral questions that do not require any psychological observations at all to answer them” (1910, p. 285).

It should not be overlooked that in the *Grundzüge*, Wundt refers to non-experimental methods as well. Especially in dealing with the “higher processes,” descriptive and comparative methods are predominantly used. This is obvious with the complex topics of volitional psychology, psychology of emotion, and psychology of intellectual functions.

Observation, Comparison, and Interpretation

“Thus psychology, just like the natural sciences, employs two precise methods, namely, the experimental method, which serves the analysis of simpler psychical processes, and the observation of mental products of universal value, which serves the investigation of higher psychical processes and developments” (Wundt 1920c, p. 30).

From Wundt’s point of view, comparison and interpretation of mental products are the characteristic methods of cultural psychology; however, he includes suitable experimental and psychophysiological findings. Conversely, on some issues of general psychology he relies on observation, comparison, and interpretation. If trained self-observation is not possible, as with young children or generally in animal psychology, external observation is required. So, Wundt states succinctly that observation in the scientific sense is “the planned pursuit of phenomena with attention,” which occurs in two steps, the recognition and the recording (1921, p. 165).

The methods of cultural psychology comprise the analytical and comparative examination of existent materials, i.e. historical facts, language, works, art, reports, and observations of human achievements in earlier cultures; less often it is about direct ethnological source material. The findings from experimental research, statistics, and other sources of information were used as well. In the first volume of the *Völkerpsychologie* and in *Elemente der Völkerpsychologie*, there are no detailed methodological considerations. It is not before his *Logik*, and more extensively in its 3rd and 4th edition, that Wundt continued to elaborate methodological perspectives in interpreting cultural products, with a minor view towards the hermeneutic tradition in the mental sciences, and to develop his principles and standards of critique. It appears to be the first systematic, but rather concentrated, contribution to the methodology of interpretation written by a psychologist (see Chapter 3. 6).

Comments

The wide scope and richness of detail already distinguishes the first edition of the *Grundzüge* from contemporary German textbooks (Ebbinghaus, Külpe, Messer, Ziehen, etc.). In many chapters it is evident that an active and demanding researcher who relied on a multitude of experimental studies is at work, including studies in Heidelberg and later in the laboratory in Leipzig. The *Grundzüge* are the accomplishment of a committed scientist who established a comprehensive research program over a period of more than 50 years. Today, it is unlikely that a single author could write a book with an interdisciplinary horizon that stretches a similarly broad scope, contains detailed content and methodological knowledge, and develops ideas with theoretical consistency based on a system of principles, i.e. postulates and strategies. His notion of psychophysical parallelism with a monistic orientation, monistic perspectivism, and critical realism needs further explanation (cf. Chapter 3.8).

From today's perspective, i.e. after decades of an extensive development of research methods, experimental designs, psychological assessment, statistical testing of hypotheses, evaluation procedures, and modelling approaches, it is not difficult to point out the imperfections and limits of the methodology elaborated and used in Leipzig. But there is no doubt about Wundt's critical awareness of methodological problems and his striving for innovations in many areas.

Although Wundt occasionally discussed methodological problems of *observation*, he never elaborated a systematic definition with concise distinctions between "pure" observation, the description of objects or mental products (material analysis), or the planned observation of other humans. Elsewhere, Wundt wrote about observation without making clear in each case whether he is referring to untrained observation, to qualified and critically reflected observation, or to a more reliable observation under experimental conditions. The term *observation* ("Beobachtung") is missing in the index of the *Grundzüge*, and in volume 3 of the *Logik* it only occurs in the context cited above. There is no explicit discussion of the *observation methods* corresponding to his standard definition of a psychological *experiment*, which is still quoted nowadays, or to his general demand for critical interpretation (Chapter 3. 6).

The chapters on feeling, affect, and volition in the *Grundzüge* include highly nuanced descriptions of psychical elements, compounds, and dynamic connections. However, in contrast to the chapters on measurement in psychophysics, Wundt refrains from explicit methodological considerations relating to concepts of description, comparison, interpretation, and observation. None of these terms are listed in the *Index* of volumes 2 or 3 of the *Grundzüge*. Instead, the reader must consult volume 3 of the *Logik*. Such omissions may have contributed to the superficial appraisal, e.g. by Titchener (1921), who suggested that Wundt tended to be an introspectionist and structuralist. Wundt essentially contributed to psychological methodology. He encouraged the development of methods and the combination of methods, anticipating later strategies in multimethod assessment. However, he never published a compendium or textbook-like compilation of this advanced methodology and its principles. The description of methods in *Grundzüge* and the comprehensive presentation of his methodology, including comparison and interpretation, in *Logik der Geisteswissenschaften* have not found any equivalent, neither in his own, nor in the next generation of psychologists.

3. 6 Cultural Psychology ("Völkerpsychologie")

3. 6. 1 Introduction and Outline

"There are two sciences to assist general psychology in this respect: the history of mental development and comparative psychology. The former traces back the gradual formation of mental life, while the latter describes its differences in the evolution of animals as well as among different ethnic groups of mankind." (1862, p. XIV). "Where the deliberate experiment ends, history has experimented on behalf of the psychologist" (1863, p. IX).

These theses, which Wundt wrote during his transition from physiology to psychology, are cited again as a reminder of his program and the continuity of his entire work. Besides general psychology, *cultural psychology* is Wundt's second main contribution to psychology. The emergence of human communities and their intellectual accomplishments, works, language, myth, and customs can be analyzed psychologically to understand the motives and law-like regularities in the process of development. In his theory of mental science, Wundt explained which methods he considered adequate by means of carefully investigating specific categories and principles of knowledge suitable for insights into the regularities of mental activity and mental development (cf. Chapter 3. 8 Epistemology and Methodology).

The *Vorlesungen über die Menschen- und Tierseele* (Lectures on the human and animal mind, 1863) already contain, more or less extensively, Wundt's fields of interest and considerations from which he later developed his epistemology and methodology. Wundt's work is permeated by the basic idea that scientific psychology should be founded on two complementary research strategies: the experiment and the methods of cultural psychology. "Thus, psychology, just like the natural sciences, employs two exact methods. The first, the experimental method, serves the analysis of the simpler psychical processes; the second, the observation of mental products of universal validity, serves the investigation of higher processes and developments" (Wundt 1920c, p. 30). According to Wundt, the main tasks of psychology in the future are actually to be sought primarily where they overlap with the fields of history and sociology, while the experimental field diminishes in the near future compared to cultural psychology (*Logik*, Foreword, 1921, p. VIII).

Instead of the quite misleading term used by Wundt, "Völkerpsychologie" (or "History of development," "Psychogenesis"), the terms *cultural psychology* and *psychological-developmental theory of the mind* are used here unless the title of the book *Völkerpsychologie* is referred to or this term appears in quotations. – Although Wundt adopted the term "Völkerpsychologie" from Moritz Lazarus and Heymann Steinthal, he remained critical towards it, but could not decide whether to use "anthropology" or "social psychology" instead (cf. Meischner-Metge, 2006; Wundt, 1896b, 1916). In his investigations, he dealt with emerging cultural processes in the diachronic perspective; however, not in a historical manner, but in an empirical-psychological one. The theoretical concepts of these analyses and attempts for integration stem from his comprehensive theory of apperception and the theory of volitional activity. Wundt neither outlined a system of ethnology with a typology of ethnic groups, nor adopted a comparative cultural psychology, nor sketched a catalogue of human universals or an abstract theory of culture.

Psychological-developmental theory of the mind emphasizes the empirical orientation, as compared to an abstract philosophy of mind or a speculative theory of culture. In this border region of psychology and the mental sciences, the way Wundt defined "Geist" (mind) in the context of his theory of categories and principles is important. To elaborate a developmental theory of mind can be considered a central guiding idea in Wundt's entire work, which, together with the theory of apperception and the psychology of will, form its foundations. Cultural psychology is Wundt's most extended field of research, and thus it is appropriate to begin with an overview of its beginnings and range of topics, as well as its methodology. The section on the contemporary and more recent reception of the *Völkerpsychologie* includes a discussion of recurring misunderstandings. Wundt's work is not only voluminous, but also quite sophisticated with its manifold and mutual relationships.

Design and Development

Wundt's ongoing interest in this field appeared initially in the short programmatic reference – quoted above – in his first book on psychology, the *Beiträge* (Wundt, 1862) and, a year later, 10 (of 57) Lectures in the *Vorlesungen* (1863) were dedicated to cultural psychology. His interest continued and led to the 10-volume opus, which became the largest part of his entire work: *Völkerpsychologie. Eine Untersuchung der Entwicklungsgesetze von Sprache, Mythos und Sitte* (Cultural psychology. An investigation of developmental laws in language, myth, and custom, 1900-1920).

Other important writings in this context include:

Über Ziele und Wege der Völkerpsychologie (About aims and strategies of Völkerpsychologie, 1888b) dealing with the demarcation of *Völkerpsychologie*);

Probleme der Völkerpsychologie (Problems of Völkerpsychologie, 1911a), a collection of earlier and supplementary articles.

Elemente der Völkerpsychologie. Grundlinien einer psychologischen Entwicklungsgeschichte der Menschheit (Elements of Völkerpsychologie. Basic features of a psychological-developmental history of mankind, 1912b), in contrast to the thematically structured *Völkerpsychologie* describing hypothetical developmental stages or "phases of culture";

Völkerpsychologie und Entwicklungspsychologie (*Völkerpsychologie* and developmental psychology, 1916) dealing with Felix Krueger's suggestion to define "Völkerpsychologie" as part of a general developmental psychology (cf. Meischner-Metge, 2006a).

Wundt later explained the methodology of cultural psychology in his *Logik der Geisteswissenschaften* (1921), but not in a very detailed manner. There are thematic connections to *System der Philosophie* (1889a/1919b) as well, and even more clearly to *Ethik* (1886), where insights about *empirical* cultural psychology and *normative* rules are integrated. The epistemological and methodical foundations are primarily explained in *Logik* (1921). So, *Völkerpsychologie* does not constitute a late work, as occasionally assumed, but was part of the research program that Wundt intended from the beginning. It amounted to the largest part of his work, and he published a thematic outline even before the *Grundzüge der physiologischen Psychologie* (1874). However, he postponed a revision of the first edition of his *Vorlesungen* for many years due to his own discontent with some partly outdated information (e.g. concerning Weber's law) and some critical journal reviews. The second edition was published in 1892 with sections on social instincts, animal societies, and states, but without cultural psychology because he was already working on a separate publication (cf. *Über Ziele und Wege der Völkerpsychologie*, 1888b) and on *Ethik* (1886).

Wundt's renewed interest in cultural psychology originated at the same time as he published his widely read *Ethik* (1886, 4th ed. 1912a, 3 vols.). In its preface, he emphasized the importance of the idea of development in understanding religion, customs, and morality. On the one hand, ethics is considered a *science of norms*, and on the other hand, these "rules of will" are changing, as can be seen from empirical investigations into morality, which is conditioned by culture. During this time, he presented a speech in commemoration of the centenary of the French Revolution on the topic of human rights and the idea of humanity in ethics in his role as Rector of Leipzig University (Wundt, 1889c)

Über Ziele und Wege der Völkerpsychologie (1888b)

This essay was Wundt's first separate publication on cultural psychology. It was written already in 1888, the year of the first edition of *Ethik*. Wundt was inspired by the psychologist Moritz Lazarus (1851), whose own approach was oriented towards that of Herbart, and by *Zeitschrift für Völkerpsychologie und Sprachwissenschaft*, a journal founded by Lazarus and the linguist Heymann Steinthal in 1860. Actually, they gave the field its name, and Wundt (1863, 1888b) referred to their research program as well. But he also reviewed several works by Herbert Spencer's and read some of Theodor Waitz's (1859-1872) reports, who had published books on anthropology and the ethnic groups of the South Seas. Thus, Wundt had a kind of basis that Lazarus and Steinthal lacked. Undoubtedly, Wundt received additional inspiration from philosophy, history, and psychology. Beginning in 1859, he held lectures on various topics within this extensive field, including lectures on anthropology in Heidelberg, *Völkerpsychologie* in Zurich and, from 1875 onwards, psychology of language, as well as anthropology, in Leipzig. Wundt critically discussed the intentions of Lazarus and Steinthal, whose scientific objective he found insufficiently organized. He pointed out that if the specific ethnological and anthropological objectives were disregarded, "three large fields would remain, which should be investigated by specific psychological methods – three fields, which at the same time are considered basic problems of all *Völkerpsychologie* because their content transcends the extent of the individual consciousness, namely, language, myth, and customs." (1888b, p. 20). He classified these fields, "where a historical and psychological investigation can be carried out in parallel," according to the traditional tripartite division of psychology into thinking, feeling, and wanting. "Language contains the general form of representations (ideas) existing in people's mind and the rules of their connections. Myth comprises the original content of these representations in their dependence on feelings and drives. Finally, customs include the general tendencies of volition that arise from these representations and instincts" (p. 25).

Originally, Wundt planned no more than three volumes, but due to the "abundance of subject matter," eventually ten volumes were published. In the preface of volume 10, *Culture and Society*, Wundt (1920) mentioned his lecture on *Völkerpsychologie* in Zurich in 1875 and his first lecture in Leipzig on the psychology of language. According to Wundt, the work underwent a considerable change with respect to content following these preparations, and extensions were added. He conveyed that he had gained new insights and had corrected some errors. Nevertheless, he was able to say that the previous "subtitle *An investigation into the developmental laws of language, myth, and customs* remains unchanged" because "the investigation itself gradually brought the inner connections between the problems of *Völkerpsychologie* to light." (1920, vol. 10, p. V).

Völkerpsychologie. Eine Untersuchung der Entwicklungsgesetze von Sprache, Mythos und Sitte. Leipzig: Engelmann (2nd and 3rd editions of several volumes; several reprints up to 1926). (Cultural psychology. An investigation into the developmental laws of language, myth, and customs, 1900-1920, 10 volumes.)

Band 1 Die Sprache. Erster Teil (1900. 3. Aufl. 1911). (Language. Part I.)

Einleitung: Aufgaben und Nachbargebiete der Völkerpsychologie. (Introduction: Tasks and related fields of Völkerpsychologie.)

Grundbegriffe der Völkerpsychologie. (Basic concepts of Völkerpsychologie.)

Zur Entwicklungsgeschichte der Völkerpsychologie. (On the history of the development of Völkerpsychologie.)

Hauptgebiete der Völkerpsychologie. (Main fields of Völkerpsychologie.)

Erstes Buch. Die Sprache. (Language.)

1. Die Ausdrucksbewegungen. (Expressive movements.)
2. Die Gebärdensprache. (Sign language.)
3. Die Sprachlaute. (Vocal utterances.)
4. Der Lautwandel. (Phonetic change.)
5. Die Wortbildung. (Word formation.)

Band 2 Die Sprache. Zweiter Teil (1900, 3. Aufl. 1912) (**Language. Part II.**)

Die Wortformen. (Word forms.)
Die Satzfügung. (Syntax / compound sentences.)
Der Bedeutungswandel. (Semantic change.)
Der Ursprung der Sprache. (The origin of language.)

Band 3 Die Kunst (in das Werk eingefügt zur 2. Aufl. 1908). (**Art.**)*

Die Phantasie und die Kunst. (Imagination and art.)
Die bildende Kunst. (The visual arts.)
Die musischen Künste. (The fine arts.)

Band 4 Mythus und Religion. Erster Teil (1905, 2. Aufl. 1910). (**Myth and Religion. Part I.**)

Die mythenbildende Phantasie. (The myth-creating imagination.)
Seelenglauben und Zauberkulte. (Belief in the soul and magic cults.)
Tier- Ahnen- und Dämonenkulte. (Animal, ancestral, and demonic cults.)

Band 5 Mythus und Religion. Zweiter Teil (1906, 2. Aufl. 1915) (**Myth and Religion. Part II.**)

4. Der Naturmythus. (Natural myths.)
5. Das Mythenmärchen. (Mythical fairytales.)
6. Die Heldensage. (The saga.)

Band 6: Mythus und Religion. Dritter Teil (1909, 2. Aufl. 1915) (**Myth and Religion. Part III.**)

7. Der Göttermythus. (Myths of gods.)
8. Die Religion. (Religion.)

Band 7 Die Gesellschaft. Erster Teil (1917) (**Society. Part I.**)

Begriff und Formen der Gesellschaft. (Concept and forms of society.)
Die Urgesellschaft. (The prehistoric society.)
Die Stammesgesellschaft. (The tribal society.)

Band 8: Die Gesellschaft. Zweiter Teil (1917) (**Society. Part II.**)

Die politische Gesellschaft. (The political society.)

Band 9: Das Recht (1918). (**Justice and Law**)

Die Rechtsbegriffe und ihr Ausdruck in der Sprache. Zur Geschichte der Rechtstheorie. (Concepts of justice and their expression in language. On the history of juridical theory.)
Die Entwicklung des Willens. Der Aufbau der Rechtsordnung. (The development of will. The construction of juridical order.)

Band 10: Kultur und Geschichte (1920). (**Culture and history.**)

Die Entwicklung der Kultur. (The development of culture.)
Die Gebiete der Kultur. (Cultural fields.)
Die Zukunft der Kultur. (The future of culture.)

* *Note:* The second edition of this work was restructured, mainly because the two first chapters on *Myth and Religion* now form a separate volume, namely *Art*, with an introductory chapter on mythical imagination. (Preface, Vol. 4, 1910, 2nd ed., p. VII). The prefaces to the 2nd and 3rd editions pointed out several smaller revisions and differences in emphasis. See also the bibliography provided by the *MPI für Wissenschaftsgeschichte* in Berlin at <http://vlp.mpiwg-berlin.mpg.de/>

3. 6. 2 Guiding Ideas and Research Program

“In the common and general meaning of the term, psychology aims to investigate the initial and mutual relations of the facts of immediate experience, as given to us by our subjective consciousness. In this sense, it is individual psychology. It permanently refrains from the analysis of phenomena resulting from the intellectual interchange of a multitude of individuals. But that is precisely why a supplementary investigation into the mental processes linked to the societal life of man is needed. This investigation is the province of *Völkerpsychologie*. Even general psychology cannot ignore the fact that the individual

consciousness is influenced by its mental environment. Traditional ideas, language, forms of thinking, and ultimately the far-reaching effects of education and culture – these are the preconditions of subjective experience. These conditions imply that many facts of individual psychology can become accessible to our full understanding only from the point of view of “Völkerpsychologie.” Völkerpsychologie is concerned with “man in all his relations, which transcend the limits of his individual existence and refer back to mental interaction as their general condition ...” (1900, I, pp. 1-2). “We know man only as a social being.” (1886, p. 389).

The field of higher mental processes includes the development of thinking, language, artistic imagination, myth, religion, customs, and other processes and works within the community. Wundt stated that “Völkerpsychologie” deals with those mental processes that underlie the general development of human communities and the emergence of common intellectual products of universal value.“ (p. 6). “Psychology deals with developments, which – just like all mental processes – are tied to manifold external relations between individual beings and to relations to their own physical nature. A crystallization of laws abstracted from these relations is just as impossible in psychology as in any other field of historical development. *Völkerpsychologie* is not just a field of application in individual psychology since communal intellectual life constitutes higher-level mental processes through which language (phonetic gestures, expressive gestures, communication, vocal utterances), myth, religion, and culture in general emerged. Wundt’s distinction between higher and lower functions is supplemented and superimposed by differentiating the individual consciousness (individual soul) from the intellectual community (“Volksseele”, collective consciousness). When Wundt speaks of “Volksseele,” he does not mean a “super-consciousness” (or general consciousness, general will) or something metaphysical since “humans exist only as individuals.” The term “soul” simply indicates the connection of mental processes that exist not only between the mental processes of each individual, but also between several individuals. “The mental developments that emerge when members of a community live together are processes that are no less real than those within the individual consciousness.” (1900, I, 1, p. 10). Additional perspectives include the relation between the individual and community, intellectual works, and the intellectual and natural environment of man. Thus, cultural psychology could be understood as a supplement, a superstructure, or as a more general reference system of general psychology. Both fields together constitute psychology in its entirety.

“In dealing with the entirety of human relations, which are generally conditioned by intellectual interactions and which transcend the limits of individual existence, *Völkerpsychologie* is only partially defined by its name. The individual is not only a member of a community. In his immediate circle, he is enclosed by his family and the place he is assigned to by birth or destiny. He is placed in the midst of other entities who are intertwined in manifold relations based on the specific cultural stage, its achievements, and legacies.“ (1900, I, pp. 2-3). Wundt bypasses *ethnological* investigations into the characteristics of different ethnic groups and phenomena “caused by the personal intervention of individuals.” Thus, “the history of intellectual production in literature, art, and science does not belong to *Völkerpsychologie*.” (p. 4). It deals exclusively with common products created by an indefinite number of humans, allowing “universal laws of development” to be discerned. Historical processes and local and national differences are not topics of concern. “In contrast to this, *Völkerpsychologie* directs its attention only to the psychological regularities of social life itself.” (p. 5).

Topics and Principles

The volume indices compiled by Hans Lindau enumerate a large number of topics in the *Völkerpsychologie*. The more frequently mentioned terms include: Christianity, gods/deities, property, capital, commerce, crafts, economic forms, inventions, technology, science, community, society, law, people and nation, war, humanism, humanity, national economy, agriculture, work, matrimony and family, education, fire, domestic animals, hunting, church, collectivism, culture and nature, art, machines, monarchy, myth, nation and culture, ploughing, religion, self-consciousness and self-education, clan, customs, state, tribe, class, town, totemism, world, economy, and value.

Wundt refers throughout to his conception of general psychology. He thus connects descriptive terms with psychological concepts, e.g. attention and thinking, theory of feelings and affects, volitional and instinctive activity, consciousness and imagination, and expressive movements and actions. Wundt’s psychology is basically a process theory, which is indicated here by the frequency of concepts meant to explain the mental connections between sensory representations, ideas, feelings, and volitional activity, such as the special processes of *agglutination*, *apperception*, *assimilation*, *association*, *condensation*, *displacement*, *fusion*, and *complication*. Many lines of development are investigated with regard to *semantic* change and *motive* change. In almost every volume, there are detailed interpretations based on the principle of emergence (creative synthesis), the principle of unintended side effects (heterogony of purposes/ends), and the principle of contrast.

Wundt did not attempt to classify the motives, values, or purposes related to the subjects of economic, technological, scientific, juridical, and political forms. About twenty concepts are discussed more frequently, albeit without the use of a uniform terminology or a classification of motives, as opposed to more recent authors and theorists of culture who try to outline and provide a list of transcultural *universals*. Wundt frequently mentioned motives related to the division of labour, ensoulment, redemption, the need for happiness, production and imitation, childrearing, artistry, welfare, magic, salvation, adornment, guilt, punishment, atonement, self-education, play, and revenge. Other motives and values could be discerned in

descriptions of freedom and justice, war and peace, legal structures, state structures, and forms of government, as well as with regard to the development of a worldview of culture, religion, state, traffic, and a global political and social community. But in general, neither these topics, nor the fundamental discussion about the question of intellectualism versus voluntarism in the interpretation of facts pertaining to cultural psychology seem to dominate, but rather the basic connections with *religion*. Wundt's interpretation frequently tends in this direction by drawing connections not only to art, imagination, dancing, and ecstasy, but also to familial forms, systems of government, and phenomena such as the belief in the soul, immortality, demons, and gods, as well as myths, world religions, rituals, sacrificial rites, witchcraft, animism, and totemism. The consistent presence of religious beliefs in all volumes of the *Völkerpsychologie* (with the exception of vol. 1 and 2 on language), indicates that Wundt considered them to represent the essential relationship between values and motives.

Basic explanations and several sections on psychological analysis, including remarks on methods of interpretation, are spread across several volumes. *Völkerpsychologie* contains a general introduction (vol. 1, pp. 1-39), explanations of the general law of semantic shift and the unifying function of apperception (vol. 2, pp. 610-627), imagination as a general mental function, including a long section on the experimental analysis of imagination ("Phantasievorstellungen") (vol. 3, pp. 3-101), an extensive chapter with considerations about concepts and forms of society, including demarcations from sociology, psychology, ethnology, and cultural psychology (vol. 7, pp. 3-91), and a chapter entitled "The development of the will," which reaches beyond the respective chapter in the *Grundzüge* and includes explanations of motives and instinctive and volitional activity (vol. 9, pp. 219-367). In vol. 10, Wundt summarizes his considerations about psychology of culture, and this final volume is still of interest thanks to its discussion of the development and the future of culture.

For Wundt, an example of the *self-education* of man is his upright gait. Here, physical dispositions "are combined with culture, which is partly exerted by external conditions and partly a result of free will" (vol. 10, p. 189). Wundt describes the discovery of fire as another example in which two incidents are combined. Fire is first ignited by chance, then controlled deliberately. In such combinations of human activity with a preceding or simultaneous natural event, Wundt recognized a creative principle of culture. When it comes to tools as cultural products, he discerns a second principle. Here, intellectual guidance appears, which is not a force opposed to nature, but, in its original conception, a part of nature itself. This guidance stems from the rules of one's own thought, which reveals a coherent system of causes and effects, purposes and ends, and therefore values, thus it also relates reflexively to the norms of one's own conduct." (p. 195). "Value is marked by freedom and causality by necessity. Both are joined in the concept of value-creating causality, which, by this unity, constitutes the ultimate concept of culture" (p. 202).

Development and Value

Cultural psychology constitutes "an intermediate link between psychology, which strives for unity, and history, which splits up this unity in many ways." Only cultural psychology proves convincingly that "regarding the material phenomena of culture, mental processes [...] are the *primum movens* of all culture." The simpler the volitional acts that cause the emergence of cultural values, the clearer this "teleological causality" can be discerned in those volitional acts. In the more complex processes, intermediate links are involved "according to the nature of instinctive acts, which extend partly into this field without psychical motives that are directly detectable." (vol. 10, pp. 218-219). According to Wundt, development and value are the decisive concepts of cultural psychology, and value constitutes "the highest principle, without which the concept of culture and, even more, of cultural development generally lose their meaning. The concept of value could actually be used merely in a relative sense." (p. 216). Wundt's decisive position stems from his epistemological considerations and his understanding of causal and teleological thinking. "So this erroneous teleology ... always leads to the psychological assumption that man knows the purpose of his actual cultural deeds in advance and, thus, basically knows his culture before it exists." He distinguished between causal, historical conditions and psychological ones, which always originate in psychical motives. "By comprising both, *Völkerpsychologie* in its entirety has the main task of approaching a developmental history of the mind. Furthermore, the psychology of culture has to detect the origin of all mental values upon which culture is gradually built in its various forms." (p. 218). It is from this perspective that Wundt's permanent interest in ethics is to be understood, which he pursued – partly parallel to his work on the *Völkerpsychologie* – by combining statements based on empirical psychology and normative, philosophical propositions.

Main Task of a General Developmental History of Mankind

In the last volume of his *Völkerpsychologie*, Wundt looked back and stated that the psychology of culture has essentially enlarged the field of psychology beyond traditional subjects such as *monadology*, theory of the soul (Theorie der Seele), the *doctrine of faculties* ("Vermögenspsychologie"), and empirical psychology. His main work is complemented by another book and a collection of articles.

Elemente der Völkerpsychologie. Grundlinien einer psychologischen Entwicklungsgeschichte der Menschheit (1912). Leipzig: Kröner, 516 pages. (Elements of *Völkerpsychologie*. Basic features of a psychological-developmental history of mankind)

Einleitung. (Introduction).

Geschichte und Aufgabe der Völkerpsychologie. Ihr Verhältnis zur Völkerkunde. Analytische und synthetische Darstellung. Die Völkerpsychologie als psychologische Entwicklungsgeschichte der Menschheit. Einteilung in die vier Hauptperioden.

(The history and tasks of Völkerpsychologie. Its relation to ethnology. Analytical and synthetic description.

Völkerpsychologie as psychological-developmental history of mankind. Classification of the four main periods.)

Erstes Kapitel. Der primitive Mensch. (The primitive man.)

Zweites Kapitel. Das totemistische Zeitalter. (The totemistic age.)

Drittes Kapitel. Das Zeitalter der Helden und Götter. (The age of heroes and deities.)

Viertes Kapitel. Die Entwicklung der Humanität. (The development of humanity.)

Here, unlike in his 10-volume *Völkerpsychologie*, Wundt intended to describe cultural development “in its juxtaposition, common conditions, and reciprocal relations. ... Indeed, I believed that I had to see such a comprehensive view as the main goal of investigations into Völkerpsychologie, even if it meant treating the individual fields separately in order to pave the way to attaining it. ... Here we are confronted with the more general question as to the regularities of mental development. The subtitle of this book intends to provide a hint about the latter task.” (1912b, Preface, p. III).

The fact that the forms of original tribal organization and matrimony, the cults of souls, demons, and totems are discussed here more thoroughly than the social and state institutions extending historically through time, does not indicate their relative importance. Wundt emphasized that this cultural psychology and its “developmental history, which this book tries to elaborate,” are only provisional. “In most cases, not the actual facts, which are accessible to our direct observation, will decide this, but rather it occurs in accordance with what is psychologically probable, and so we prefer the assumption that best complies with all known facts of individual and also cultural psychology. It is this empirical task, as a part of psychology and its application, where the psychological history of development – of which this book strives to outline a sketch – is separated from the philosophy of history, whose foundations, I suppose, should be constituted by such a psychological history of development, but without interfering in its particular tasks.” (pp. IV-V).

“Thus, we may well consider Völkerpsychologie to now be a part of psychology, the legitimacy and aims of which no doubt remains. These aims are given to us by the intellectual products resulting from collective human life, which cannot be explained merely by the qualities of an individual consciousness since they require the interactions of many.” (p. 3). The individual consciousness is “influenced by a prehistory, of which it is unable to provide us with explanations. That is why it is erroneous to assume that children’s psychology could solve the ultimate problems of psychogenesis. In a cultivated society, the child is surrounded by influences that can never be separated from what spontaneously emerges in the child’s consciousness. In contrast, *Völkerpsychologie* demonstrates real psychogenesis by means of observing the different stages of mental development, which mankind is still undergoing even today. Here, it demonstrates self-contained primitive conditions to us, from which a bridge could be built through a nearly continuous chain of intermediate links to the more complex and higher cultures. Thus, *Völkerpsychologie* means developmental psychology in the significant sense of this term” (p. 4). The term psychogenesis (“Psychogenese”) is not included in the index and is not used by Wundt anywhere else. At the end of Chapter 4, Wundt explains the relation between a *psychological history* of development and a *philosophy of historical development*.

In *Elemente*, Wundt considers the main stages of cultural development successively, unlike in the thematically structured volumes of *Völkerpsychologie*. But, due to the problem of transitions, the demarcation of separate periods is difficult and remains arbitrary to a certain extent. Even the assumption of a primitive stage as a starting point should be understood in a relative sense. “There is no definite ethnological feature that separates this primitive stage from further development, but rather it is merely a sum of psychological features, which, because they seem primal, constitute the concept of primitivity.” (pp. 7-8). “Thus, these basic mental features are to be singled out in order to attain a somewhat accurate classification of periods.” Wundt then described the main periods of this typology in nearly 500 pages, which he referred to as “The primitive man,” “The totemistic age,” “The age of heroes and gods,” and “The development of humanity.”

The succession of these four stages of development should be understood as a very simplified approach to interpretation. Furthermore, the Index indicates that a few perspectives dominate, namely, religion (demons, deities, belief in gods, heaven, and the hereafter, as well as cults), types of domination (heroes, chiefs, tribes, and states), family formation, as well as cult types, myth, fairy tales, music, and art. In addition, the fourth period is outlined with regard to world culture, world religion, empires, and universal language. The topic of humanity is treated quite briefly, and without reference to its extensive discussion in *Ethik* (1886/1912). Thus, the *Elemente* are to be understood as a mere proposal for classifying periods of cultural development since the subject matter is restricted to the origins of religion, early types of leadership, the development of humanity, and the broadening view of the world. On the other hand, a friend of Wundt’s, the Leipzig historian Karl Lamprecht (1906-1911), published a theory of developmental stages around the same time. These were classified merely by economic form, perhaps because he had statistical data about population and economy at his disposal. In the *Elemente*, unlike in the 10 volumes of *Völkerpsychologie*, there are neither theoretical connections to general psychology, nor to essential epistemological principles. Whoever did not read more than the *Elemente* (or whoever was responsible for only translating this work by Wundt), was unable to adequately access Wundt’s cultural psychology.

Other Contributions to Cultural Psychology

Probleme der Völkerpsychologie (Problems of cultural psychology, 1911a/1921) comprises a series of articles. In Wundt's *Essays* (1885, 2nd ed., 1906) and *Reden und Aufsätze* (Speeches and articles, 1913b), several other articles are gathered, partly in revised form, and contain supplements and replies to criticism. Thus, these texts differ from the originally published versions. Specific chapters from *Ethik* and *Logik* are essential for greater understanding.

Probleme der Völkerpsychologie. 2. vermehrte Aufl. herausgegeben von Max Wundt, 1921 (1st ed. 1911). 217 Seiten.

(Problems of Völkerpsychologie.)

I. Ziele und Wege der Völkerpsychologie. (Goals and paths of Völkerpsychologie.)

1. Die Aufgabe der Völkerpsychologie. (The task of Völkerpsychologie.)
2. Das Programm einer historischen Prinzipienwissenschaft. (The programme of a historical science of principles.)
3. Die Hauptgebiete der Völkerpsychologie. (The main fields of Völkerpsychologie.)
4. Völkerpsychologische Streitfragen. (Controversial issues in Völkerpsychologie.)

II. Zum Ursprung der Sprache. (On the origin of language.)

Schallnachahmungen und Lautmetaphern. (Imitations of sounds and vocal metaphors.)

III. Der Einzelne und die Volksgemeinschaft. (The individual and the community.)

1. Der Individualismus in Sage und Geschichte. (Individualism in legends and history.)
2. Der Ursprung der Völkerpsychologie. (The origin of Völkerpsychologie.)
3. Kritik der Einwände gegen die Völkerpsychologie. (A criticism of objections to Völkerpsychologie.)
4. Der Individualismus in der neueren Sprachwissenschaft. (Individualism in recent linguistics.)
5. Naturhistorische Analogien zur Sprachgeschichte. (Analogies to natural history and the history of language.)
6. Die Nachahmungstheorie. (The theory of imitation.)

IV. Pragmatische und genetische Religionspsychologie. (Pragmatic and genetic psychology of religion.)

1. Die pragmatische Philosophie. (The philosophy of pragmatism.)
2. Die pragmatische Religionsphilosophie. (The pragmatic philosophy of religion.)
3. Die Rezeption des Pragmatismus durch die deutsche Theologie. (The reception of pragmatism in German theology.)
4. Die genetische Religionspsychologie. (Genetic psychology of religion.)

V. Völkerpsychologie und Entwicklungspsychologie. (1916) (Völkerpsychologie and developmental psychology.)

1. Die Völkerpsychologie: Wort und Begriff Völkerpsychologie. (Völkerpsychologie as a word and concept.)
2. Der Entwicklungsgedanke und die Entwicklungspsychologie. (The notion of development and developmental psychology.)
3. Die psychologische Analyse. (Psychological analysis.)
4. Der Begriff des Gesetzes in der Psychologie. (The concept of law in psychology.)
5. Genetische und kausale Interpretation. (Genetic and causal interpretation.)
6. Das Assimilationsproblem und der Fluss des psychischen Geschehens. (The problem of assimilation and the flow of psychological activity.)
7. Systematische und genetische Betrachtung geistiger Vorgänge und Entwicklungen. (Systematic and genetic reflections on mental processes and developments.)
8. Die Völkerpsychologie als Teil einer allgemeinen Entwicklungspsychologie. (Völkerpsychologie as part of a general developmental psychology.)

VI. Die Zeichnungen des Kindes und die zeichnende Kunst der Naturvölker (1918). (Children's drawings and the art of drawing in primitive societies.)

3. 6. 3 The Methodology of Cultural Psychology

“Due to its intermediary position between the natural and mental sciences, psychology actually has a great wealth of methods at its disposal. On the one hand, there are the experimental methods, and on the other hand, objective products in cultural development also offer abundant material for comparative psychological analysis.” (*Logik*, 1921, p. 51). The methodology of

cultural psychology, just like that of general (experimental) psychology, is closely related to Wundt's epistemology and theory of science, and especially to his system of principles. Wundt explained the main principles several times, from the *Vorlesungen* (1863) and the *Grundzüge* (1874) onwards, but he did not use a homogeneous terminology (cf. Chapter 3. 7). He defined psychology as a mental science, and in his research and books he promoted two fundamental methods: the experiment and the interpretation of mental processes and intellectual achievements. For Wundt, psychology is the *fundamental* discipline of all mental sciences (whereas philology is the *special* foundation) because psychological analysis and abstraction regulate the application of comparative methods. On the methodological level, his intention was to analyze the psychical elements and compounds, as well as the logical operations that constitute the hermeneutic process, and to underline the task of critical reflection on interpretation.

In the first volume of *Völkerpsychologie* (1900), Wundt provided general remarks only about special methods and strategies. He refers to language and other objective intellectual products, i.e. extant materials including records and documents as well as forms of religion, juridical and political doctrines, historical and archaeological objects, literature, works of art, travelogues, and other sources depicting human behavior in earlier cultures, as well as the results of experimental and other scientific investigations, statistics, and further sources of information. More recent ethnographic material from research on present-day cultures was also important, but field studies of current ethnic groups were only of minor significance since development must be investigated primarily across cultural periods that are separated in time and space. In his *Völkerpsychologie*, Wundt compiled a huge variety of heterogeneous sources in order to portray intellectual accomplishments in society. The index of the major part of his library, which is preserved in Japan, and his correspondence show the extent of these sources (cf. Chapters 2. 2 and 2. 5).

Wundt coherently outlined the methodology of cultural psychology in *Logik der Geisteswissenschaften* only (1921, pp. 232-240, cf. also the 1st ed. 1883), but even here there is no didactically comprehensive survey and this section is relatively short. However, the section entitled *Prinzipien und Methoden der Geisteswissenschaften* (Principles and methods of the mental sciences) (pp. 23-143) must be considered as well. Here, Wundt explains some important heuristic principles, including the *principle of subjective assessment* as "a conscious and systematically trained shifting of perspectives from the subject to the object" ("Hineindenken") (1921, p. 25), the dependence on the intellectual environment, and the causal and teleological points of view. He also described *general* methods in the mental sciences and the *comparative method*, i.e. *interpretation* (pp. 78-108) and *criticism* (pp. 108-123). The subsequent sections on the principles of psychology are of basic importance as well (pp. 240-293). Two central themes should be pointed out here, namely, the strategies of *individual* and *generic* comparison, and the essentials of the methodology of *interpretation*.

Individual and Generic Comparison

"The fundamental method of psychology based on *Völkerpsychologie*, applied to the separation of singular motives from widespread ones, and ultimately from those which are rooted in general human motives, is comparison in the forms actually characteristic to the mental sciences." (cf. 1921, pp. 62-78). It is followed by an interpretation based on the psychical processes, in order to establish "general psychological laws valid for community-based phenomena" (1921, p. 238). To put it succinctly, Wundt distinguished between two goals of the comparative-psychological method. The *individual* comparison collects all relevant features of the overall impression of the observed object and, based on this, the *generic* comparison sets up a sequence of variations (referred to in modern usage as *case study* and *typology*). The comparison has the advantage of providing information about general representations, ideas, feelings, and drives, particularly if specific historical relations are excluded. The *historical-psychological method* of individual comparisons is suitable for assessing developments and deriving developmental laws, which must subsequently be confirmed by generic comparison (1921, pp. 62-78, pp. 238-239, 1920a, p. 372).

Principles of Interpretation

In his general methodology of the mental sciences, Wundt explained the concept of *interpretation*: "We think that the main task of all sciences whose objects are mental processes and mental products consists in teaching us to understand these objects. We call the method used to convey such an understanding *interpretation*. According to its original meaning, it presupposes – just like the synonymous concepts *hermeneia* and *exegesis* – two knowing and recognizing subjects: the interpreter, who understands the object, and the listener or reader, to whom it is conveyed. The greater and more complex the tasks of interpretation became, the more the focus of this mediating activity had to be shifted to the preparatory intellectual activity of the interpreter, so that he could attain, at first for himself, the requested understanding before he could begin teaching it to others." (1921, p. 78). Wundt actually referred to the tradition of hermeneutics in the mental sciences and, although he mentioned its well-known proponent Friedrich Schleiermacher (1838), his conception and classification of philological criticism seems to be oriented more towards Schleiermacher's student, the philologist August Boeckh (1877), and the philologist of antique cultures, Friedrich Blass (1886), as is demonstrated by a comparison of basic concepts and structuring of this topic. By

adopting methodical principles of philological and historical hermeneutics and referring to the *hermeneutic circle* and *hermeneutic problems*, Wundt wanted to explain that the process of interpretation, with its typical to-and-fro movement, essentially contains, besides logical and content-specific elements, psychological conditions as well. Thus, the cognitive functions of the interpreter have to be analyzed.

Wundt (1921, p. 78) considered *interpretation* the standard method in the mental sciences: “We therefore generally describe the epitome of the methods as interpretation, which serves to provide us with an understanding of mental processes and intellectual products.” Interpretation starts with induction, i.e. through a psychological analysis of the internal structure of the psychical experience, and progresses by means of analysis, subsumption, analogy, and deduction, aiming at *both* explanation and understanding. “We want to explain nature ... Yet, we want to understand, and not just explain, the phenomena that are given to us either as mental processes or that we relate to them according to specific objective features. We want to understand how they are mutually related and how they are related to natural phenomena” (p. 79). “If interpretative methods considerably differ due to the special conditions of investigation because some aspects of the general procedure might be less important compared to others, or because some auxiliary methods are required, such as statistical comparisons, this always demonstrates that the object pertains to the mental sciences, and that the investigation eventually leads to a psychological analysis by means of which the ultimate goal of any interpretation to be attained is an understanding of the object together with its explanation.” (p. 94).

The task of interpretation consists of “trying to explain and understand mental processes and intellectual creations, partly through subsumption under pre-existing knowledge, and partly through an extension of the latter to new contents with analogous structures. Thus, conclusions through subsumption and through analogy are the two fundamental logical operations of the interpretative process.” (p. 84). Wundt did not regard the *hermeneutic circle* as an original mode of thinking, but as a combination of two tasks, i.e. the subsumption to previously known concepts and the recognition of new facts, which in most cases are intertwined (p. 83). He insisted that, on the logical level, methods of explanation and methods of understanding are not fundamentally different, and thus he rejected Wilhelm Dilthey’s version of a dualistic methodology. Wundt argued that it is false to think that the natural sciences and mental sciences have “an entirely different logical basis.” (p. 80). Dilthey (1883) had initially declared that he was inspired by Wundt, among others, to make his prominent distinction between *explaining* and *understanding* (see also Dilthey, 1894).

The methodology of the mental sciences is guided by several principles. Among them, there is the *principle of subjective assessment* by “shifting perspectives from the subject to the object”, and its fallacies, i.e. the “inclination of the observer to project his own individual personality into the object” (Wundt 1921, p. 25), as well as incorrect evaluation based on criteria from a different historical period. “Therefore, the psychological analysis of objective mental processes and intellectual products always requires, besides the transfer of one’s own subjective consciousness, a rethinking of one’s own personality according to the external features with which the observer is confronted.” (p. 61). The *principle of dependence on the intellectual environment* demands inquiring into the intellectual sphere that surrounds the related products and the acting personality in order to learn to understand the influences, processes, and acts of individuals and communities. The “variety of possible observations” of the “intellectual environment” is demonstrated through the analysis of individual personalities and biographies (pp. 23-29). Here, neither a detailed distinction between the comparative-psychological and the historical-psychological methods of interpretation, nor the discrete steps from individual comparison to generalized statements can be explained in detail (cf. Wundt, 1921).

According to Wundt, the methodology of interpretation is characterized by a specific connection between inductive and deductive operations, resulting in a uniform procedure and requiring psychological analysis and synthesis. Parts of the interpretative process include shifting of perspectives from the subject to the the mental object, establishing of guiding hypotheses, and the process of gradual perfection of the interpretation through critique. Only in connection with this critical reflection does the interpretation become the standard method of the mental sciences. Critique is a method that is opposed to interpretation and consists in dissecting the established coherence by means of psychological analysis. It scrutinizes external and internal contradictions, assesses the authenticity of intellectual products and, furthermore, it is a critique of values and opinions. There are several principles about how to distinguish a naïve from a valid interpretation. The typical fallacies of the intellectualistic, individualistic, and unhistorical interpretation of mental processes all have “their source in the habitually subjective assessment based on simplistic psychology.” (Wundt 1921, p. 297).

Wundt judged the use of statistical methods within this theory of interpretation as follows: “Statistics as a method is actually just an application of the comparative method to a very large number of cases of the same or different type, no matter if this number results from a repeated observation of individual phenomena or from the repetition of the phenomena themselves by a large number” (1921, pp. 74-75). Apart from psychophysics, the use of statistics is applicable mostly in the social sciences, especially in demography. “The actual purpose of the *statistical* method consists in eliminating singularities. Yet statistics is obsolete most of the time if a general regularity is sufficiently obvious among single phenomena, as with linguistic rules, and it is invalid if the singular influences completely dominate, as with historical events, where only certain general conditions, such as those related to population and economy, can be investigated by statistical methods, but not the historical processes

themselves. But it finds its most successful application among population-related phenomena, where a number of singular influences with effects that spread in various directions exist, and a small number of relatively constant laws overlap with each other.“ (p. 137).

Pluralism of Methods

Cultural psychology differs from “individual psychology” with regard to its methodology. From time to time, Wundt emphasized this difference, but he never claimed there was a strict dualism of methods. So, the psychological analyses in the *Grundzüge* extend beyond the field of experimentally controlled self-observation, and often they are based on mere observations and descriptions. It is a question of the adequate combination of supplementary methods and perspectives, not of irreconcilable opposites. For instance, Wundt demonstrated how the topics of *language* and *expression of feelings* could be elaborated through the findings of psychophysiological research on emotions, and the process of *imagination* in myth and religion through the experimental analysis of imaginative ideas and the examination of children’s drawings. In the psychology of language, tachistoscopic experiments helped to differentiate between common and unusual combinations of letters, and association experiments contributed to the analysis of word formation and syntax. Meischner-Metge (2006b, pp. 138-139) wrote: “A summary of Wundt’s methods based on *Völkerpsychologie* would read as such: It is an attempt to extract individual and social behavior from diverse descriptions of life, to grasp and explain their relations, and to derive generalizations for the development of psychological theory. On a methodological level, one could regard Wundt’s procedure as an analysis of documents and works. One has to point out Wundt’s endeavour to apply findings from experimental psychology to the analysis of documents and products. This approach, which combines methods of natural and mental sciences, and assigns an adequate place in psychological research to the subject, has not been paid much attention up to now. It must be observed that even Wundt described his entire methodological concept several times, yet he did not explain it in a communicable manner, defend it, or – if needed – correct or attempt to gain wider acceptance.“ (p. 147). It would be sufficient to leaf through the volumes on the psychology of *language* or the volume on *Art* to realize that the assertions about Wundt’s supposed strict methodological dualism are actually misleading. The illustrations, including a tachistoscope and psychophysiological recordings, document that Wundt related findings from experimental psychology to his psychology of language, as well as to other topics, without reservation.

Wundt arranged his material according to the following three aspects:

- (1) the three fields of psychology that constitute the basic topics in cultural psychology, i.e. language, myth, and customs, as well as the three traditional domains of psychology, i.e. representations, feelings, and volitional activity:
- (2) individual topics that are differentiated in various ways with respect to developmental motives and explanations based on the theory of apperception:
- (3) a highly provisional four-stage conception of cultural development.

The investigation required a systematic change of perspective and a multi-dimensional approach, i.e. not only a simple, either diachronic or synchronic view (cf. Wolfradt, 2011, p. 28). The interpretation of individual features can lead to types, phases, and sequences, and dynamic patterns appear in the co-variation of such courses of development. Developmental laws differ from principles of natural causality by “integration into mental development, which is inherent to every single mental process and its products.” (Wundt, 1902-1903, 3, p. 792). Wundt assumed there to be three laws of historical and social processes and states, which correspond to the principles of psychical causality and are designated as laws of *historical (social) results*, laws of *relations*, and laws of *contrasts* (*Logik*, 1921, p. 427). Wundt pointed out that such laws of development have a *psychophysical* basis. His main example is the development of language. Following Charles Darwin, Wundt considered expressive movements to be the origin of language. Even if only the psychological aspect is taken into account, for instance mental development during different stages of life, one must not neglect the physical aspect, nor the natural environment and the material conditions of life. Wundt uses the concept of *psychophysical laws* of development when certain physical conditions or the material environment take part in development. The development of the individual human personality is an example of this. It belongs to the biological line, but at the same time it is “the simplest form of historical development” because natural and mental life “are parts of a whole, the lower stages of which we can mainly discern from its objective or natural side and the higher stages from the subjective, mental side, which resonates in our own inner experience.“ (pp. 793-794). The continuity of this system of principles demonstrates once more that, with regard to methodology, individual psychology and cultural psychology are not essentially different fields of psychology.

The wording of the following statement by Wundt is quite telling: “Thus, psychology – just like the natural sciences – has two exact methods at its disposal. The first, the experimental method, serves the analysis of the simpler psychical processes, while the second, the observation of universally valid intellectual products, serves the investigation into higher mental processes and developments” (1920c, p. 30). Wundt used the term “exact” quite often in his early years, supposedly in order

to defend against the ever spreading speculative psychology of his time. His frequent use of “law” and his concept of a developmental theory of the mind suggest a project of *nomologic research*. But Wundt made some essential qualifications, including unhesitating self-criticism. He acknowledged that a developmental history of cultural psychology would depend in many cases on assumptions and hypotheses. For instance, it is an assumption that the notion of deities originated in the fusion of a heroic ideal and an earlier belief in demons. “In such cases, we cannot rely on a conclusion based on facts, which are inaccessible to us, but rather on what is psychologically probable, i.e. we have to adopt the assumption that corresponds best to the known facts of individual psychology as well as with those of *Völkerpsychologie*.” (1912b, p. V).

In the mental sphere, regularities can be discerned everywhere. However, even the “developmental laws” are to be considered empirical laws, i.e. “they are abstract generalizations of certain regularities based on experience.” The concept of a “mental law of developmental” would be a contradiction in terms. “The law states that the same phenomena would occur again under the same conditions; however, *mental development* does not involve identical conditions that repeat themselves. Nevertheless, mental development entails regularities, but it is not regulated in that sense that it could be traced back to a ‘developmental theory.’” (1916, p. 115). For this reason “it would be more important in terms of a universal understanding of mental life as a whole to understand principles than to establish laws.” In his *Logik*, instead of the strict *Gesetz* (*law*), Wundt used the terms *Gesetzmässigkeit* and *Gesetzlichkeit*, which would both translate as *regularity*, in order to express that there are creative (emergent) processes and singularities, and that exceptions are possible.

3. 6. 4 Reception and Comments

In his introduction to Buschan’s two-volume *Völkerkunde* (Ethnology), Lasch (1922, p. 5) stated: “In the fields of sociology and linguistics, as well as in the theory of religion, the names Herbert Spencer, Wilhelm Wundt, and H. Steinthal have to be mentioned here without any doubt. Yet none of them were professional ethnologists. The first two were originally philosophers, and the last was a linguist. Nevertheless, ethnology is indebted to them because they were the first to apply philosophical and linguistic methods and insights, especially with regard to psychology, to the phenomena of ethnology, and thus shed a new light upon some of these fields. Incidentally, Wundt’s *Völkerpsychologie* (referred to as developmental psychology by Krueger) consists essentially of a comparative ethnology comprising the social and mental aspects of human culture.”

There are only a few contemporary reviews on single volumes of the *Völkerpsychologie*, and none of the entire work. – But who would actually have thought himself capable of doing this? Some of the volumes were reviewed under the perspective of other sciences. Generally, the immense achievement of writing about this very extensive field was appreciated, but there were some critical objections as well. Only selected extracts from the research on the reception of Wundt’s work are presented here with the aim of dispelling some of the misunderstandings that are typical in the secondary literature on Wundt.

The reviews published by the classical philologist Franz Skutsch (1904), the sociologist and ethnologist Alfred Vierkandt, the psychologist Richard Hellmuth Goldschmidt, and the ethnologist Richard Thurnwald are noteworthy (see Fahrenberg, 2011, 2016b). Only Thurnwald’s (1929) objections and misunderstandings are discussed here since his judgements were adopted in a sweeping manner by some later authors. Thurnwald reproached Wundt for having treated publications and travelogues uncritically, and for having never personally examined a member of a primitive culture. He claimed that Wundt only wanted to describe developmental stages, believing that historical process equals progress. It is clear that Thurnwald feels superior because of his own field work in Central Africa and the South Pacific; however, he did not adequately consider the methodological problems of his work, e.g. how could Thurnwald (1910) apply inferences from the contemporary Melanesian tribes to the “Urvölker” (prehistorical ethnic groups)? For Wundt, it would have required not only several trips around the world, but also travel through time in order to directly encounter earlier stages of cultural development, to which he primarily referred. Thurnwald ignored Wundt’s intention, which did not aim to compare current cultures, but to establish a developmental theory of mind, and which, for instance, seeks access to the formation of thinking via the development of language. Furthermore, Thurnwald ignores Wundt’s attempt to establish a theoretical systematization of the underlying process based on his system of principles and theory of apperception.

In Leipzig, none of Wundt’s assistants or doctoral students were really interested in cultural psychology or continuing Wundt’s program. This included Felix Krueger, the successor to his chair in philosophy, Oswald Külpe, who dismissed cultural psychology from the field of empirical psychology, and Willy Hellpach, who in his later book on *Völkerpsychologie* scarcely referred to Wundt’s research. Wundt’s colleagues in Leipzig, contemporary psychologists, and most authors of textbooks, generally lacked interest. Thus, there was a break in tradition, and not just in Leipzig. With the simple statement that Wundt did not establish a “school,” this part of the reception history of Wundt’s work is not sufficiently understood. Contrastingly, Sigmund Freud adopted numerous ideas from Wundt’s cultural psychology (Tögel, 1989; Fahrenberg, 2015a, p. 313, p. 216). The index in the last volume of Freud’s *Gesammelte Werke* lists 56 entries referring to Wundt.

In her short biography of her father’s life, Eleonore Wundt (1928) outlined the approach and main contents of the *Völkerpsychologie*, in which she played an essential part in preparing and elaborating. “Nearly at the same time when W. was

writing down his first psychological observations in his *Theorie der Sinneswahrnehmung*, he was already planning to provide a kind of superstructure to individual psychology through *Völkerpsychologie*. In 1859, the first volume of Th. Waitz's (1859-1872) *Anthropologie der Naturvölker* was published, and in 1860 Lazarus's and Steinthal's *Zeitschrift für Sprachwissenschaft und Völkerpsychologie* was published for the first time. Thus, in this time, a great interest in such questions developed, and W. consequently added a second volume to his *Vorlesungen über die Menschen- und Tierseele*, in which he predominantly dealt with issues related to *Völkerpsychologie*. But he soon realized that the time was not yet right for a comprehensive presentation of this field, and when the second edition was published in 1892, he left out this part completely. However, *Völkerpsychologie* remained in his purview and he often held lectures about it up until about the end of the last century when he began working on his 10-volume *Völkerpsychologie*, which was eventually published over the next 20 years (1900-1920). ... Originally, Wundt wanted to discuss language, myth, and customs in three volumes, but the work continued to significantly grow beyond the initial plan. The subtitle 'An Investigation of the developmental laws of language, myth, and customs' was maintained, and these main sections related to certain phenomena of individual consciousness. The section on language mainly deals with representations ("Vorstellungen"). The section on myth reflects feelings and deals with imaginative activity that is expressed through myth. The section on customs comprises the common orientations of the will ("Willensrichtungen"). The first two volumes deal with language, which W. considered the best material for a psychology of thinking, as the various forms of language represent the various forms of thinking." (pp. 632-633).

Oesterreich (1923) reviewed and commented on Wundt's great work in the six pages of *Überwegs Grundriss der Geschichte der Philosophie*, beginning with some remarks about Wundt's system of principles, which is important for further understanding. He wrote the following about *Völkerpsychologie*: "Whereas for some researchers, even a few important ones, the field of psychology is exhausted by the range of experimental methods, one of the most eminent features of Wundt's personality as a researcher is that he – who inaugurated a huge part of experimental psychology himself – refrained from the one-sidedness of some other researchers (cf. the preface to Vol. 1 of the 1st edition of *Völkerpsychologie*). ... "The first two fields of *Völkerpsychologie*, language and myth, were thoroughly discussed by Wundt himself. Perhaps his full mastery of the material – partly ethnographic, partly philological – is even more astonishing given the character of these subjects, which are far removed from philosophy, than his universality, which Wundt proved with his *Logik*. ... In its universal character, this work shows a certain affinity to Herder's ideas about the history of mankind. However, it differs from him in its empirical character and the exclusion of metaphysics. Wundt takes his material based on positive facts primarily from individual sciences, predominantly from ethnology, the history of religion, etc. Once more, his achievement consists in the psychological [aspect], and in his interpretation and animating of facts that otherwise would mostly have remained dead or disconnected." (pp. 354-358).

Language. "All language has its origins in an integral whole comprised of facial expression, mime, and vocal expression. From these heterogeneous, but mutually supportive expressive movements, only the sound structures remained, as they gained precedence based on the striving to communicate. With respect to further changes in language, one must distinguish between sound shifts and semantic shifts. The former are caused by physiological changes within the speech organs. The latter are caused by gradual changes of the conditions of association and apperception, which determine the complexity of ideas that appear when hearing or speaking a word. As a result, the relation between word and representation, which was initially presupposed, is fading more and more. Words are increasingly losing their meaning and becoming signs for mere concepts and for relation and comparison of their patterns. In this way, abstract thinking emerges, which – not being possible without a preceding semantic shift – is itself a product of those psychical and psychophysical interactions, which underpin the development of language." (p. 358). Thus, a sentence is not a later product, but rather a more primordial one, whereas the separation of individual words in a sentence is often uncertain in lower stages of language. At first, the order of words corresponds to the order of ideas.

Myth. The psychical basis of myth is "a particular mode of apperception characteristic of a wholly naïve consciousness," which Wundt calls "animating apperception, in which the primitive man considers all objects living. The earliest creation of myth is partly related to one's own imminent destiny, and partly determined by affects caused by the death of companions and their commemoration, especially in dreams. Thus, the belief in ghosts and demons emerged along with the associated fetishism. Only on higher stages does the animating apperception deal with greater natural processes (clouds, rivers, stars, and so-called 'nature myths')." (p. 355).

It was not until about 1979, the year dedicated to Wundt on the centenary of the founding of the laboratory in Leipzig, that more references, articles, and instructive monographs on *Völkerpsychologie* or parts of it were published (including, among others, Bushuven, 1993; Eckardt, 1997; Nitsche, 1990; Schneider, 1990; Stubbe, 2006; Oelze, 1991). Thus, half a century after Wundt published Volume 10 of his *Völkerpsychologie*, there was an increase in interest in his remarkable work, and even a few Anglo-American psychologists indicated their interest, recognition, and appreciation, yet there was still no translation, leaving a very large obstacle to reading his work or gaining sufficient access to it. There is still no concise and comprehensive overview of Wundt's *Völkerpsychologie* for an Anglo-American audience.

Danziger (1983) in *Origins and basic principles of Wundt's Völkerpsychologie* summarized as follows: "The basis of this conception was provided by his analysis of human action and the theory of gestural communication to which this led. Cultural products were seen as presupposing a collective subject and as acting back on the psychology of the individual. Although Wundt's conceptions had serious limitations some aspects of his thought about the relationship of individual and culture provide perspectives that are of continuing interest." (p. 303). Danziger briefly explained Wundt's distinction between voluntary action and drive activity that is paralleled by spontaneous affective expression. "These expressive movements constitute a psychophysical action which involves inherent links between certain overt movements and certain mental states. These links are universal in all normal members of a species. There is also an innate mimetic response to the expressive movements of others. This means that the mental states of one individual will be transferred to others via linked expressive movements. For Wundt this mechanism of 'gestural communication' provided the indispensable foundation of social life without which human individuals could never begin to understand each other. – This was of course the basic feature of Wundt's theory which G. H. Mead developed so productively."

"In the first place, the necessary replication of similar mental states in the communicating individuals led to the formation of an interpersonal configuration which may be conveniently referred to as a collective subject, though this is not a term that Wundt himself uses. ... Because communication through expressive movements takes place in individuals endowed with memory, the effects of such communication persist in time and affect the mental functioning of the participating individuals. ... Gestural communication thus leads to cultural products that have an objective existence. ... Language, the first of these products, provides the medium in which his higher cognitive activity operates. Myths, formed on the basis of language, give form to human capacities for imagination, and customs provide the framework within which individual choice and volition must operate. ... These three components of culture are the product of a collective subject, they are not the product of intentional choices by individuals. They undergo relatively slow changes over time which are regular and lawful because the individual psychological processes whose interaction produces them are themselves regular and lawful. It should therefore be possible, according to Wundt, to use observed regularities of cultural change to draw inferences about the underlying psychological processes in individuals. He expected that the conclusions arrived at on this basis would converge with the findings that had been obtained through studying individuals in the laboratory. ... Sound shifts in the history of languages, for example, are not the result of deliberate actions by individuals but are the product of a level of social interaction where individuals are simply the components of a collective process that develops quite independently of their conscious individual intentions. While he recognized the role of social patterning in individual choice, Wundt did not regard rational social action as psychologically interesting. Such behaviour was as varied as the infinite diversity of circumstances under which individuals made their decisions." (p. 308-309).

"There were both internal and external reasons for the historical failure of Wundt's VPs [Völkerpsychologie]. Among the internal reasons the most important undoubtedly lay in his very limited awareness of the possibility of subjecting the process of social interaction to direct investigation. This meant that he had to leap constantly for the products of interaction to intra-individual processes, while the crucial mediating process never advanced beyond the status of a general theoretical postulate. Secondly, Wundt's insistence on excluding from consideration all instances of voluntary socialisation proved to be punishingly restrictive. ... However, these limitations of Wundt's VP, serious though they were, could hardly be considered to be intrinsically more damaging than the limitations of other projects which flourished while Wundt's died." (p. 310).

Danziger referred to language difficulties and the attitude, prominent in the Anglo-American countries, designating psychology as a natural science, i.e., experimental and behavioristic. Already the distinction between drive activity (Triebtätigkeit) and voluntary action (Willkürhandlung) are not represented in this view. "Such specific areas of research as psycholinguistics (Blumenthal, 1970; Porsch, 1980) and non-verbal communication (Wundt, 1973 [*The Language of Gestures*. ed. Blumenthal]), where Wundt's perspectives were in fact far ahead of their time, blossomed half a century too late for his influence to be felt. In other areas his approach was completely at variance with the interest in control and manipulation of social behavior that motivated so much of subsequent social psychological research." (p. 310).

However, Danziger restrained from explaining Wundt's basic intentions and methodology. Why did he prefer to discuss Wundt's conception in the framework of *social* psychology instead of *cultural psychology*? Danziger attempted to review the strategy underlying Wundt's research program in contemporary terms of individual and social interaction and, thus, essential aspects and categories are lost with respect to Wundt's original intentions. He did not succeed in translating Wundt's terms and conceptions of mental community and mental development into English and, thus, apparently problematic judgements and category mistakes occur. Only in a later article entitled *The unknown Wundt. Drive, apperception, and volition*, did Danziger (2001b) provide an advanced interpretation to Wundt's theory of apperception and dynamics of volition.

Greenwood (2003) discussed *Völkerpsychologie* and Experimental Social Psychology: "Wilhelm Wundt distinguished between 'experimental psychology' and *Völkerpsychologie*. It is often claimed that Wundt maintained that social psychological phenomena, the subject matter of *Völkerpsychologie*, could not be investigated experimentally but must be explored via comparative-historical methods. In this article it is argued that it is doubtful if many of the passages usually cited as evidence

that Wundt actually had such a view. It is also argued that if Wundt did hold such a view, it was inconsistent with his own general theoretical position and methodological practice. It is suggested that it is anachronistic to attribute such a view to Wundt, because he appears to have had little interest in the experimental analysis of the synchronic social dynamics of psychological processes. Most of Wundt's arguments about the inappropriateness of experimentation were directed against the introspective analysis of diachronic historical processes." (p. 70).

In "*Völkerpsychologie: The synthesis that never was*," Diriwächter (2004) provided a large number of historical remarks and references; however, appears far from an explanation as to the meaning of this title: Is the lack of synthesis attributed to Wundt or to most of his readers? Thus, Diriwächter did not precisely examine Wundt's critique on the concept of *Völkerpsychologie* as proposed by Lazarus and Steinthal, and the *psychological* framework of Wundt's work is hardly elucidated. Diriwächter, at least, comments on one of Wundt's basic principles, the *principle of creative synthesis*, but beyond that, there is neither an adequate introduction to Wundt's epistemology and methodology, nor an account of Wundt's *theory of apperception* that provides the common theoretical frame for integrating cultural and general psychology.

Valsiner (2007) cited Wundt, but indirectly (from Diriwächter, 2004), and precedes a contribution in a handbook with a quotation of Wundt's, which is not further interpreted: "This basic law of all mental development is, what follows always originates from what is preceding and nevertheless appears opposed to it as a new creation, every stage of development is already contained in the preceding and is, at the same time, a new phenomenon (Wundt, 1900, 1973, p. 149)." (Valsiner, 2006). In contrast to this, Wong's (2009) *Retracing the footsteps of Wilhelm Wundt: Explorations in the disciplinary frontiers of psychology and in Völkerpsychologie*, reviewed basic concepts and pointed out the relationship to the cultural historical approach as developed by Vygotsky and Leontiev, and also discussed methodological issues.

"Two areas of particular interest are Wundt's views on the nature of psychology and its relationship to other disciplines, and his discussion of the nature of *Völkerpsychologie* and its role in psychology. ... From the above discussion of Wundt's key works on *Völkerpsychologie*, we should note that numerous valuable insights into the underlying psychological processes of the collective mind, embodied in language, mythology, and the moral system, were offered by Wundt. Despite Wundt's use of the terms 'law' and 'lawfulness' in his writings from time to time, his *Völkerpsychologie* is a type of research which falls within the paradigm of interpretation ... The limitations of Wundt's studies are nonetheless evident. First, we can see that some discussions on underlying psychological processes were not as comprehensive as others. It has been stated that the interaction between individuals and communities constitutes a focus of the study of *Völkerpsychologie*. It appears that such a declared goal was not satisfactorily dealt within the 10-volume work, although traces of such a discussion can be found in *Elemente der Völkerpsychologie*. Furthermore, links were not consistently made between the psychological processes of *Völkerpsychologie* and those of individual psychology, even though some efforts were made in the 10-volume work. It is probably not feasible for one man at one time to complete the tasks set by Wundt. When we relinquish this unrealistic expectation, we are in a better position to appreciate his accomplishments" (pp. 252-253). "Our major goal was to explore the most misunderstood legacies of Wundtian psychology. Specifically, we have attempted to reevaluate Wundt's views on such fundamental questions as the nature of psychology and its relationships to philosophy. We have also asked whether cultural-historical psychology is merely a subfield of psychology worth pursuing, or, in reality, a core element of the discipline, particularly where higher psychological processes are concerned." (p. 258).

Ferrari, Robinson and Yasnitsky (2010) referred to a *cultural-historical science of consciousness in three acts*: Wundt, Vygotsky, and Bandura. "From the beginning of psychology as a scientific discipline, some of its most influential researchers have made efforts to coordinate biological and cultural aspects of human experience into a single comprehensive theory of human development that coordinates the evolution of the human body, cultural evolution and personal development. This article looks at three such efforts by Wilhelm Wundt, Lev Vygotsky and Albert Bandura. Although there is some continuity in their ideas, the lack of historical connections between these similar efforts is striking. How to explain that a cultural historical psychology of human experience is repeatedly reinventing itself? Perhaps it arises, from time to time (and almost anew), as a natural foil to an overemphasis on the biological basis of consciousness, often associated with biological determinism, which certainly characterized many 19th-century physiological explorations of the mind and still features widely in today's science of consciousness." (p. 96).

In the context of Wundt's epistemology and philosophy, Kim (2016, Internet resource) also referred to *Völkerpsychologie*: "While *VP* does not concern itself with historical or linguistic facts as such, this does not mean that it is not concerned with individuality. Indeed, it is through the study of the psychological motives only apparent in history or language—i.e., in communal existence—that our understanding of the *individual* is completed (cf. *L III*: 224, 228). This view is typical of Wundt's perspectivism. Just as psychology is an alternative perspective to that of physiology, so too (*within* psychology) *VP* provides an alternative perspective to that of experimental psychology. Wundt considers none of these various perspectives dispensable, since each one is a complement necessary for total science. But while each of these perspectives reveals a (phenomenologically) irreducible ("parallel") network of causal chains, the *process* so explained, Wundt holds, is in every case one and the same. There is just *one* empirical world and reality, but many irreducible varieties of experience. Thus, in the case

of VP, too, he claims that there is no “general law of spiritual events (*geistiges Geschehen*) that is not already completely contained in the laws of the individual consciousness” (L III: 225).”

Among the more recent literature on Wundt, are Jüttemann and his co-authors (2006a) and Araujo (2016). In his introduction to *Wilhelm Wundts anderes Erbe – ein Missverständnis löst sich auf* (Wilhelm Wundt’s other heritage – A misunderstanding is dissolving, 2006b), Jüttemann portrays Wundt as a scholar of the mental sciences, and as the actual founder of psychology as part of the mental sciences. He has some good reasons for this too, which could counteract the widespread stereotype of Wundt as a proponent of psychology as a natural science. This entire book is dedicated to this end and to the updating of Wundt’s thoughts for today’s discussions on the foundations of psychology: Language-related issues were discussed by Kegel, the research on myths by Allesch, and the psychology of religion by van Belzen. Graumann acknowledged Wundt as a “highly modern” scientist because Wundt “put the approach of experimental psychology, centered on the individual, and the approach of *Völkerpsychologie*, centered on social relations, in a complementary relation and attached great importance to the interconnections that exist between language, myth, customs and ‘social life’ on the one hand, and between the ‘phenomena of the individual consciousness’ (representations, feelings, and the will) on the other hand.” (p. 55). Above all, Wundt took language, including sign language, as a “true representation demonstrating the entirety of human psychical capacity.” (p. 55). Graumann characterized Wundt’s theory as, “after all, a kind of action theory” and cites Wundt: “If the affects evoked in the other are associated with representations that maintain a set of representations that has already begun, or that are even opposed to it, then the other’s gesture is not just a mere reflex of the first one’s movement, but the joint movement has become a responding movement (Wundt 1911, p. 254).” (p. 62). “With his approach of interconnecting individual and common psychical processes, and with his assumption of an interaction between these processes and the products ‘emerging’ from them, Wundt postulated a dialectic process. This constitutes a hermeneutically fruitful reference system, up to now only marginally realized, but worth further elaborating.” (p. 66).

Araujo (2013, p. 1337) observed: “A relationship between VP and contemporary cultural and cross-cultural psychology is not easy to establish. There is no direct line from the former to the latter. In fact, many representatives of cultural and cross-cultural psychology do not even cite the works of Lazarus, Steinthal and Wundt, which already shows that there exists no strong influence. ... However, it is not impossible to find some points of contact. ... If, for example, one accepts the classical “emic-etic distinction” (with its theoretical and methodological consequences), Wundt’s search for universal psychological laws behind cultural phenomena has nothing to do with contemporary cultural psychology, which denies the existence of such universal laws and argues for an interpretative approach, focusing on the understanding of a particular culture. On the other side, it would be not so distant from cross-cultural psychology, which defends a nomological approach, looking for general psychological traits in human culture. But between these opposite poles, there is room for integrated perspectives, which tend to mix both views and erase or at least mitigate that strong opposition, thus denoting only a minimal influence of the former VP.” Araujo (2016, pp. 181-208) analyzed the history of the genesis of the *Völkerpsychologie* and its relations to Wundt’s complete work in detail, and he discussed the difficult demarcation from the contemporary history and the philosophy of history, anthropology, and sociology. He added critical remarks about some of Wundt’s generalizations that do not appear tenable. Araujo’s thorough examination of the philosophical foundations (and their partial revision) conveyed Wundt’s predominant intentions aimed at a coherent worldview.

Anyone who is interested in the field of cultural psychology and psychological anthropology and who knows about Wundt’s psychological developmental theory of the mind will be surprised that Wundt’s ideas and research are not mentioned by well-known German authors in the field, such as Boesch (1980) and Bischof (2004, 2008). – In the one-sided, often distorted reception of Wundt’s work, his cultural psychology and theory of science – his “other heritage” (Jüttemann, 2006a) – have mostly been lost.

General Obstacles to Reception

The field of “*Völkerpsychologie*” has a somewhat awkward structure, making it difficult to comprehend. Maybe Wundt could not find the time and energy to structure this work anew, which had expanded to 10 plus two additional volumes. Furthermore, there are several more reasons why the reading of *Völkerpsychologie* is difficult. From a didactic point of view, the topics of the 10 volumes are juxtaposed rather than connected to each other – just as the thematically quite limited outline of the four stages of cultural development in the *Elemente* – and on a methodological level, Wundt does not contribute much to a generalized systematic view.

Important considerations on cultural psychology, their basic assumptions and principles are spread over several volumes, and their order is partly modified in the second edition.

- There are no summarizing descriptions of the most important motives and values or of the laws and law-like principles of development.
- There is neither a separate chapter on the comparative methods and interpretation, nor a separate compendium.
- There are only a few systematic cross-references to those sections of the work where the relevant philosophical and epistemological assumptions are explained and discussed in more detail.

- The leading epistemological principles and the methodology are primarily explained in the *Logik*, and Wundt hardly uses systematic cross-references, but seems to take that basic knowledge for granted.

Many persistent misunderstandings of Wundt's "Völkerpsychologie" as a kind of ethnology (in German: "Völkerkunde") oriented towards psychology could have been avoided if he had chosen the title "Cultural psychology" or "(psychological) anthropology," which he also took into consideration. Besides the didactically insufficient interconnection of his main works, further difficulties arise due to the relatively late publication of his theory of science and methodology in the *Logik*, where they were hardly expected to be found or sought. Generally speaking, only reading *Elemente der Völkerpsychologie* cannot provide an adequate impression of Wundt's cultural psychology because the essential theoretical and methodological foundations are not explained there. However, this is what is special about Wundt compared to other authors. From today's point of view, Wundt's perspectivity, his style of thinking, and the corresponding, often very complex, syntactic structures are considered further obstacles. And this may be why there are but few English translations of Wundt's work. Among his writings on cultural psychology, only *Elemente der Völkerpsychologie* has been translated, yet the English title, *Elements of Folk Psychology*, already indicates the basic misunderstandings and flawed reception.

Wundt primarily dealt with the development of language since he considered this the most important way to access the psychology of thinking. Furthermore, this is the field with the largest quantity of continuous source material, and Wundt had the opportunity to complement its philological and psychological analysis with his own investigations in experimental psychology, which, aided by current observations of child language and children's drawings, he partly carried out by himself. In the three volumes on language, Wundt's methodical approach and the details of psychological analysis can be recognized best: regularities of apperception and association, purposive volitional activity and value orientation, and numerous examples of the heuristic use of his main epistemological principles. Which of Wundt's questions and theoretical elements could supply guiding ideas or at least heuristic principles would have to be discussed in respective theoretical contexts, for instance regarding Wundt's psychology of language or his description of myth formation and totemism, or his concept of "self-education" (and "self-creation"). But Wundt's comprehensive conception is still an indispensable reference system with its goals, system of principles, perspective views, and exemplary interdisciplinary approach.

The criticism sometimes directed to Wundt's cultural psychology, e.g. that it was developed without a "psychology of social interaction," is actually trivial. As Wundt explained, the scientific research on the development of mankind has merely mental "objectivations" at its disposal. A retrospective cultural psychology cannot obtain findings from direct observation and empirical research on social processes, motivation, personality, intelligence, education, etc., except for an extremely short modern period. Thus, even more important are a critical interpretation of the accessible source material (objectivations) and the convincing theoretical integration.

Quite often there has been criticism put forward that Wundt established – and carried out on a methodical level – a *division* in psychology by distinguishing experimental psychology ("individual psychology") from cultural psychology. But it is astonishing that Wundt's aim towards unity and consistency, which he emphatically expressed, and towards the connection of psychological perspectives is scarcely remembered anymore. He established focal points in the field of methodology, and did not demand a strict methodological separation between both fields, but rather accepted experimental findings in core fields of cultural psychology. For Wundt, his central theoretical and epistemological concepts, i.e. the theories of apperception and principles of psychical causality, apply equally to the entire field of psychology. Dealing with Wundt's theory of science soon leads to the recognition that its alleged dualism is a recurring *stereotype*. A second objection claims that Wundt's cultural psychology lacks the actual "genetic" perspective, i.e. the psychological analysis of the social interactions leading to common cultural development. In view of this stereotype, one could ask in return: Which methods could Wundt have used to analyse the interactive and psychical processes, instances of voluntary socialisation etc., in developmental stages of ancient and even preliterate cultures – traveling not only across continents but through time?

3.7 Ethics

3.7.1 Overview

Wundt begins his textbook on Ethics as follows: "The task of the present work is to investigate ethical problems with immediate reference to factual considerations pertaining to moral life. The author intended to lead the reader to these ethical questions along the same path that he himself had been led, and he believes that this way is actually the most suitable for seeking an empirical foundation of ethics. There has been no lack of speculation and psychological endeavours in this field, and I am willing to concede that they are legitimate. But as far as metaphysics is concerned, I think it is *ethics* that could contribute the most important cornerstone to the foundation of a general world view, and thus it would not be fruitful to reverse the relations

and base moral philosophy on metaphysics. Psychology has been such an important starting point for me, and such an indispensable aid for the investigation of ethics, that I do not understand how one could do without it. But in my opinion, the actual efforts in this direction, mostly derived from the development of older empiricism, are too biased within the horizon of individual psychology, and, within this, stuck in that stage of common-sense reflection that confuses one's own considerations with facts. I consider *Völkerpsychologie* the actual entryway to ethics. It has the task, among others, of discussing the history of customs and moral ideas from psychological points of view.“ (*Ethik*, 1886, Preface p. III).

Ethik. Eine Untersuchung der Tatsachen und Gesetze des sittlichen Lebens (Ethics. An investigation into the facts and laws of moral life; 1st ed. 1886; 3rd revised ed. 1903, Vol. 1-2; 4th revised ed. 1912, Vol. 1-3)
(Ethics. An investigation of the facts and laws of the moral life. By Wilhelm Wundt. Translated from the second German edition (1892) by E. B. Titchener, J. H. Gulliver, and M. F. Washburn. Vol. I -III. London, 1901).

Band I

Einleitung: Die Ethik als Normwissenschaft. Die Methoden der Ethik. Die Aufgaben der Ethik.

(Ethics as science of norms. The methods of ethics. The tasks of ethics.)

Erster Abschnitt: Die Tatsachen des sittlichen Lebens (The facts of moral life)

Die Sprache und die sittlichen Vorstellungen. (Language and the ideas of morality)

Die Religion und die Sittlichkeit. (Religion and morality)

Die Sitte und das sittliche Leben. (Customs and moral life)

Die Natur- und Kulturbedingungen der sittlichen Entwicklung. (Natural and cultural conditions of moral development)

Band II

Zweiter Abschnitt: Die Entwicklung der sittlichen Weltanschauungen. (The development of moral world views)

Das griechisch-römische Altertum. (The Greco-Roman Age)

Die christliche Weltanschauung und ihre Wandlungen. (The Christian world view and its transitions)

Die Neuzeit. (The modern age)

Die philosophischen Moralsysteme. (Philosophical moral systems)

Band III

Dritter Abschnitt Die Prinzipien der Sittlichkeit. (Principles of morality)

Die psychologischen Grundlagen der Ethik. (The psychological foundations of ethics)

Die Faktoren des Sittlichen. (The factors of morality)

Die sittlichen Normen. (Moral norms)

Vierter Abschnitt: Die sittlichen Lebensgebiete. (The fields of moral life)

Die einzelne Persönlichkeit. (The individual person)

Die Gesellschaft. (Society)

Der Staat. (State)

Die Menschheit. (Humanity)

In *Volume I*, ethics is defined as a formal science of norms of conduct; however, it can adopt epistemological principles that were derived from empirical investigations into culturally conditioned morality. Ethics is understood here as the philosophy of morality. Wundt designated both *logic* and *ethics* as sciences of norms, and he reflected on norm-abiding and norm-contra-vening behavior, what one ought to do, and what one does, in order to explain that ethics is neither a merely speculative nor merely empirical science. It requires a different procedure than the philosophical investigations into logic. Wundt assumed that there are two ways, namely, anthropological investigation (in the sense of Wundt's own *Völkerpsychologie*) and analytical inquiry into concepts of morality. Based on that, principles are to be formulated and examined by applying them to different fields, such as family, society, state, education, etc. It is interesting how Wundt dealt with certain topics and questions in some chapters of Vol. I, *Tatsachen des sittlichen Lebens*, from a predominantly ethical point of view, compared with his own treatment in the respective volumes of the *Völkerpsychologie*. The *Ethik* contains sections that look like summaries of the more extensive explanations in the *Völkerpsychologie*, e.g. individual forms of life (nutrition, habitation, clothing, labor) as well as forms of social relations, societies, and human life. Also, the last chapter of this volume, *Die Natur- und Kulturbedingungen der sittlichen Entwicklung*, summarizes important psychological, social, and environmental conditions in a way not found in the 10-volume *Völkerpsychologie*. Thus, Vol. I of *Ethik* is suited for a parallel reading with *Völkerpsychologie*. Besides that, several chapters of the first edition of *Ethik* (1886) present a first version of topics of cultural psychology from an ethical perspective. Wundt extended their content while working intensely on the volumes of the *Völkerpsychologie*.

In *Volume II*, Wundt described the development of moral world views in four chapters, beginning with the Greco-Roman age and the Christian world view as well as its shifts, up to modern times and philosophical systems. He did not intend to discern hypothetical stages of development of philosophical and ethical conceptions. At the end of this volume, he suggested

a *classification of moral systems* (pp. 257-289). Wundt distinguished the *eudemonic* moral systems, which are concerned with individual happiness, i.e. the pure egoism (egotism), the egoistic and the altruistic moral welfare, versus evolutionary moral systems, i.e. the individual and the universal evolutionism. In his extensive discussion of individual and universal evolutionism, he referred mainly to Leibniz, and also to Darwin and Spencer. Wundt reinforced the fundamental importance of the general idea of *evolution*, which runs through all biological sciences. Friedrich Wilhelm Schelling would have been the first who stated its overall significance for natural philosophy. From these beginnings, a universal idea of moral life evolved, which is now common ground for all humanity. Wundt generally criticized the tendency to connect egoistical perfectionism with utilitarian morality, and he pointed to the dubious ideal of self-perfection, because ultimately it would lead to the “maximization of happiness” (eudemonism) instead of also recognizing a moral motivation in community-based tasks (cf. Wundt’s rectorate speech, 1889c). A discussion about individual objectives (self-preservation, self-satisfaction, self-perfection), social and human aims in ethics, and the development of humanity can be found elsewhere as well (*Ethik*, vol. 3, pp. 81-91; *Elemente der Völkerpsychologie*, 1912b, pp. 465-516).

In volume III, the psychological foundations of ethics are described in detail, above all in the psychology of *will* (volitional psychology), with individual will and common will as its two aspects. “The will appears to us as an act of individual consciousness. As such, the evolution of the will coincides with the evolution of the individual self-consciousness. ... What from the perspective of the individual might seem to be a sum of distinct forces, partly opposed to each other, may present itself in the light of the common will as a unity ... This context is represented externally by all features of culture and customs, in which the persistent feelings and thoughts of a community are formed. Language, mythological and religious beliefs, habits and norms of conduct refer to shared mental experiences that extend beyond everything an individual might keep for itself. This is why humans everywhere live together with the same dispositions and under the same environmental conditions; the content of their thoughts and feelings is essentially the same. This is expressed most clearly in language, which is the most original of all common manifestations of life (pp. 22-23). In the first edition, Wundt already stated “We know man only as a social being ...” (1886, p. 389).

Wundt compared individualism and universalism, and analyzed their respective social theories. “According to the first, the individual is the only real and original will... according to the second, the general will is as original and real as the individual will, and because of its comprehensive nature, the latter is more important.” (p. 25). The subsequent sections deal with the freedom of will and conscience as well as aspects of continuous self-education. “Freedom is the ability of a human being to determine his actions through careful choice between different motives. The suspension or absence of freedom may have external or internal reasons. The former is characterized by constraint, which inhibits the effectiveness of motives by external forces, while the latter is characterized by a lack of reasonableness. Thus, the motives do not fully develop due to their inhibition in the consciousness of the acting person or because it permanently lacks the normal abilities for self-motivation. “When a man only follows inner causality, he acts freely in an ethical sense, which is partly determined by his original disposition and partly by the development of his character. A man, whose current motives are not determined by the causality of his entire mental history, does not act freely, but is to be tossed around (“Spielball seiner Triebe”) subjected to his own drives, which are stimulated by the actual motives in his consciousness.” (p. 53). Freedom consists of everybody’s chance to act according to his own essence and character, but also to the general will, without any external inhibition and without any constraint. He who follows only the impulses of his instincts is not free.

Wundt explained the concepts used in the following section: “We do not want to talk of goods, but of moral purposes, not of virtues, but of moral goals, not of duties, but of moral norms. Purposes and motives together form the factors of morality, which are confronted by norms formed as comprehensive, imperative sentences, with those factors as prerequisites.” (p. 71). In the chapter *Faktoren der Sittlichkeit*, Wundt discusses moral purposes as well as moral and immoral motives, followed by a chapter on punishment and theories of punishment. He summarized the principle of morality as follows: “Attitudes and actions are moral if the individual will is congruent with the general will, in which it is contained; and, if several more generalized wills are effective at the same time, congruence with the most comprehensive general will determines the value of the attitude and action” (p. 126). Wundt pondered on the reasons why men “from the moment they entered the threshold of culture, learned to view the subjugation of the individual will to a general will as the ruling principle of their life order.” Wundt finds the answer to that question in the influence gained by religion in merging feelings of “commitment and devotion to a higher, superimposed will, in which the principle of all morality is rooted” (p. 130). Wundt adds a reflection on the perspectives of mental and mechanical causality as well as the “causality of the character.”

The third chapter contains an extensive survey of the concept of norms in ethics as well as types of norms. These themes entail questions about conflicting norms and exceptions as well as questions about their application and respective values. Wundt suggested a general rule to settle conflicts: “As soon as norms with various scopes of value conflict, the more comprehensive takes priority, while the social goal takes priority over the individual, and the human goal takes priority over the social goal.” (p. 142). Wundt essentially related these norms to the self-esteem, as a duty towards oneself, and to esteem for fellow men, but he did not refer to Kant’s “categorical imperative” or to the universally known “Golden rule.” (Küng and Kuschel, 1996).

3. 7. 2 Individual, Social, and Human Norms

Wundt classified moral norms into individual, social, and human norms and distinguished them from legal norms. “In each of the three sectors, we can distinguish a subjective from an objective norm, and accordingly a subjective and an objective concept of duty and virtue: the subjective norm refers to a motive or an attitude, the objective norm to a purpose or an action. Each norm corresponds to a duty and a purpose at the same time. . . . So, the duty refers to the subjective coercion of the moral norms, while the law refers to the objective freedom in their observance. As the duty is formed in free self-determination, so the law is based on the possibility of external obstacles, which are opposed to free self-determination due to the existence of other free subjects. Because of this, moral norms remain subjective precepts that everyone should abide by; however, this cannot be forced. In contrast, the legal norms remain a system of objective rules, which, if necessary, require the aid of coercion for their enforcement.” (pp. 150-151). Thus, there are three pairs of norms to be understood in connection with the entirety of mental life and the idea of humanity. The norms have the concept of morality as a prerequisite and contain only a formal prescription. The content of the moral duties is left undetermined since they depend on the respective domains of life (pp. 152-160):

Individual norms

The subjective duty of each individual towards himself is self-respect; the objective duty is self identity (“Selbsttreue”). Both relate to each other like attitude and action. Investigating the individual motives contained in them leads to the field of social and humanitarian norms: *Think and act in such a way as never to lose respect for thyself. – Fulfil the duties to thyself and to others, which thou hast undertaken.*²

Social norms

“The objects of social norms are one’s fellow human beings with the individual and common purposes toward which they strive. The entirety, to which actions are related, . . . is the society with its division into family, community, state, professional, and other social groups. Respect of fellow human beings, as a subjective attitude, is, as is the case with self-respect, contrasted with an objective norm . . . It consists in the public spirit, in accepting and fulfilling duties imposed on the individual by the family, state, or other societal relations” (p. 155): *Respect your neighbour as thyself. Serve the community to which thou belongest.*

Humanitarian norms

“All acts of dutifulness, charity, and common interest connected to a conscious self-sacrifice of the individual or a community united to fulfil a duty, go far beyond the limits of the individual or social conditions in which they first take place. Even the moral subject itself immediately feels that while fulfilling his limited duty, he is taking part in an infinite task, which causes the individual as well as the immediate social interest to disappear” (p. 157). The feeling connected to this infinite task is humility; the objective virtue is self-devotion. Once more, Wundt only designated the orientation of the duties; the particular content of the acts is left to the conditions of development: *Feel thyself to be the instrument in the service of the moral ideal. Sacrifice thyself for that end which thou hast recognized to be thine ideal task.*

The fourth section of volume III is dedicated to the domains of moral life, i.e. to the individual person, society, state, and entirety of mankind. Wundt dealt with many issues by tracing the origins of specific positions, contrasting and evaluating principles as well as distinguishing between traditional and modern positions and observing their further development. Such topics include, among others, social life, the right to work, the emancipation of women, the equality of educational interests, interdenominational religious education, and tuition-free schools and universities. He also criticizes an egotistical social morality, capitalism, and other current tendencies.

3. 7. 3 Human Rights and Duties

The book concludes with Wundt’s considerations about the idea of a common intellectual life of mankind and the idea of humanity. His guiding idea reveals itself once more in his outlook on the perfection and mental development of mankind. “The idea of humanity was once rather instinctively practiced in the formation of individual goodwill rather than being clearly understood. Only now, it created its actual object, i.e. the awareness of a general life of mankind. From now on, this awareness

² Commandments translated by Margaret F. Washburn, *Ethics. An investigation of the facts and laws of the moral life.* By Wilhelm Wundt. Translated from the second German edition (1892) by E. B. Titchener, J. H. Gulliver, and M. F. Washburn. Vol. I -III. London, 1901, pp. 152–157.

serves to solve moral challenges so that it can approach new ones. Thus, the idea found an inexhaustible content from which a sense of duty develops among people, which directs the moral tasks and aims of the individual's life." (p. 344).

Decades before, Wundt (1889c) chose *Pflichtmoral und Nützlichkeitsmoral, Menschenrechte und Pflichten* (Morality of duty and utility, human rights and duties) as the topic of his inaugural speech as Rector of Leipzig University. He commemorated the great upheavals of the French Revolution in 1789, and the declaration of human rights as a moral affirmation and introduction to a national constitution. He observed two tendencies in the dominant views of life during that century: *unlimited individualism*, asserting that only the individual person has real existence, and a one-sided individualism in the *philosophy of enlightenment*. The ethics of the French Revolution added a third component, namely, that only specific concepts are relevant, such as the right of the individual person as well as the rights of freedom, property, security, and resistance against suppression. However, duties were never mentioned, but "they are assumed tacitly by respecting the same rights of one's fellow man as the only barrier to individual freedom" (pp. 482-483). The French National Assembly rejected the mentioning of *civil duties* in the constitution by a vast majority.

Wundt observed the tendency that "egotism is inevitably becoming the foundation of morality." For him, the French Revolution can be seen as the French philosophy of enlightenment transformed into concrete actions; on the other hand, he pointed out in Kant's ethics the sense of patriotism and duty expressed in philosophical terms which characterized Frederick the Great and the Prussian monarchy. "So, we face two attitudes towards life as a final result of the ethical self-determination in the last century. One is based only on the idea of personal rights, the other on the idea of personal duties; however, they share the same root, i.e. individualism, the exclusive assertion of the individual as the real object of moral purposes. ... The task that, in my opinion, our century is still working on to the present day, consists in overcoming individualism, in the founding of a moral world view that respects the value of the individual person without abandoning the independent value of the moral community." (pp. 486-487). "... so, our current belief is inspired by the conviction that the political and human communities are realities of intrinsic value surpassing the individual. Unaided by doubtful dialectical constructions, but founded on a psychology that impartially scrutinizes the facts of social life, present-day ethics tries to scientifically justify this view." (p. 497).

Autobiographical Account of 1920

The importance of ethical issues to Wundt is underlined by his autobiography *Erlebtes und Erkanntes* (1920). Here, he deals much more extensively with cultural psychology and ethics than with general psychology. In *Erlebtes und Erkanntes*, he looks back on his *Ethik* and emphasizes his critique of widespread egoism and the reign of money. His outlook was influenced by the catastrophe of the First World War. Wundt's own social and political views are more visible here than in his other writings (cf. Chapter 2 on Wundt's biography). The opposition and the relationship of individual and community are the main topic, which is discussed from different perspectives. Starting with the history of ethics, he discusses the contrast between individualism and collectivism as well as individualism (egotism) and idealism. He critically examines Karl Marx and the concepts of communism and collectivism as well as Christianity and its historical development, which led from an ethics centred on the hereafter to an ethics related to worldly problems. But his main theme was the moral philosophy of Adam Smith, Jeremy Bentham, John Stuart Mill, and Herbert Spencer. He assumed that it entails a tendency toward "an uninhibited egotistical morality." (p. 373), e.g. the "reign of money," especially in the "capitalism of the Americans." Wundt described, as another example, the ruthless expulsion and extermination of the American native tribes by the pioneers, who were supposed to be guided by Christian morality. Another section is devoted to the decline of parliamentarianism leading to the domination of parties, which possessed power in Germany and pursued the particular goals instead of common ones (p. 375). At the end of his autobiography, Wundt took a retrospective look on the World War, which he says can be characterized as a general revolution and as a worldwide catastrophe. In pointing out the unique history and outstanding culture of Germany, Wundt's account reveals strong patriotism and his hope for a rebirth of German idealism as opposed to the then dominating egoistical utilitarianism.

"When, in 1886, my *Ethik* was published for the first time, I was convinced that ethical norms could not be derived from ethics itself, but that these norms would be given by presuppositions; if not, this science would remain in indefinite and arbitrary assumptions." Wundt reminds of Platon's dictum that the community is prior to the individual. "The critique of English utilitarianism and the demonstration of its untenable consequences – from any truly moral point of view – had been the essential consequence of that work on ethics. Apart from that, it refrained from providing supporting evidence for the position of actual ethical idealism. ... My preoccupation with the history of philosophy and the individual sciences had convinced me that this has been an error from the beginning since I did not take into account public life and the influence of individual sciences and the philosophical trend derived from them. More and more, I could no longer reject the conviction that just this, the overwhelming influence of external factors of moral life, constitutes the necessary condition for the constant creating and amplifying of English utilitarianism, which now predominates in our culture, as well as in the relation between individuals and nations. And this has been the main intention, if I may confess, which directed my extensive enterprise in

cultural psychology – and any reasonable reader of this work could hardly have ignored that. Besides, I considered the theme itself an important task for current psychology” (pp. 382-383).

“The most convincing example of this intellectual connection of the individual with the community from which it stems and in which it participates through its life and deeds is shown to us by the basic function of the human intellect: language. Nowhere does the equivalence of all persons appear more obvious as in these common intellectual aims of human life, which are indispensable to a certain extent in language, religion, art, and science – and most clearly in language. ... The highest combination of these intellectual powers is the state, in which material and intellectual life together form an organic unity. It neither fell from the sky, nor, as individualism of more recent times tried to construct it, from the result of a contract between individuals – such a contract could at best have been a secondary feature of states that existed before, after they were established in the course of tribal development. ... Now, after the history of cultures has shown us that individualism, and subsequently egotistical utilitarianism, have led with compelling necessity to the victory of today’s extreme individualism over those beginnings through a series of intertwined motives – are we now to suppose that we have reached the end of cultural development beyond which there could not be further progress, and a return to earlier conditions is not possible at all? This would be a dreary end, but we must acquiesce knowing that every culture of the past has reached its end at some time. Thus, the culture of the European nations inevitably will also have the same destiny” (p. 390).

3. 7. 4 Reception and Comments

Wundt’s *Ethik* has been reviewed more often than almost all of Wundt’s other main works. The main objections were directed towards Wundt’s renunciation of an ultimate transcendent entity (God, the Absolute), and on the other hand towards his “evolutionism.” Reviewers criticized his quite abstract manner of reasoning. Even when Wundt occasionally included some illustrative hints, and some common or literary comparisons or metaphors, he did not refer precisely to examples of conflicting norms and careful weighing of norms and values. In his preface to the third edition, published in 1903, Wundt wrote that he wanted “to replace the – up to now only quite generalized – suggestions on the practical questions of moral life by more thorough and definite explanations” (cit. from 4th. ed. 1912a, p. VII). Nevertheless, specific conflicts of values and norms were rarely discussed.

Sommer (1887a) called the notion of evolution a favorite idea of the present day and claimed: “Both main features of this intellectual trend, on the one hand the disdain of individual life, and on the other hand the apotheosis of the notion of development, are the key notes of Wundt’s ethics.” (p. 131). He claims that Wundt ignores the divine origin of all life and values. “It stems from the fact that in the whole system there are no fixed points where respect and the understanding of the moral destiny of mankind can take root.” (p. 204). He reproached Wundt for his disdain of the common man, and for ascribing moral purposes not only to the individual, but to the state as well. Furthermore, Wundt’s idea of a “general moral will” reminds Sommer of some socialist theories (p. 207). In a reply to this critique, Wundt (1887a, 1987b) protested against omissions and misleading accounts of his thoughts and intentions. His work actually tried to refute utilitarianism. In addition, the reproach in criticizing individualistic ethics that he neglects the moral life of the individual would be equally wrong. Sommer replies with a broadened theological argumentation: “Conscience and religious creed are the original sources of everything good in life, and they support the good in ethics as well.” (p. 487). Basically, one should earnestly believe in the reality of a loving and merciful god. “Ethical evolutionism does not constitute an ethics in the usual sense, because it does not imply any authority of the absolute good and sacred, neither in the subjective mental life nor in the objective existence of the world.” (p. 489).

Klimke (1908) begins as follows: “For the well-informed Catholic, it is most important to know to which degree he can agree with modern ideas.” (Preface, p. IV). If someone asserts an origin of mankind without an act of creation, one has to ask, where a teleological order might come from. Klimke criticized Wundt’s “evolutionary voluntarism” and thinks that god is the absolute and ultimate purpose. According to him, Wundt’s ethics contained a disastrous contradiction: It is impossible to erect a philosophical system of ethics based on empiristic-positivistic methods (p. 197). Wahle (1897) noted fundamental difficulties in Wundt’s combination of attempts at empirical foundation, derived from investigations into morality, with his normative points of view. “It seems that Wundt has achieved nothing else than a plea for a history of social institutions. Actually, this is a very interesting part of cultural history, but not a foundation for ethical rules.” (p. 5). “The book does not deliver methods and foundations of ethics, but a nice history of religion and customs.” (p. 25).

But there were positive reviews as well. Jodl (1888) appreciated, despite some objections, Wundt’s synthesis of the thorough connection of morality with the concept of purpose, the reconciliation of eudemonism and rationalism, the balance between the principle of welfare and the principles of evolution and perfection, the constant references to the ideal cultural achievements of mankind as the ultimate purposes of the individual as well as the strivings of humans. “These are thoughts of fundamental importance for present-day ethics, and by strongly emphasizing them, Wundt has merited the gratitude of all those who are striving for placing ethics on a firm anthropological foundation, regardless of its essence.” (p. 74). Also, the philosopher Alois Riehl (1888) considered Wundt’s ethics a model worth following. With his demand for an empirical

foundation, Wundt separated ethics from metaphysical and subjective-psychological modes of foundation. Wundt used evolutionary psychology to emphasize ethics with the influence of social and religious conditions of culture, and he made the important distinction between the original motive of a custom and the purpose which ensured its maintenance. Wundt defines this heterogeneity of purposes as the general experience that “for future actions emerge new motives which incite new effects with similar consequences. This displacement and repression of primary by secondary motives and effects, caused by the success of an action, entails a continual growth of intellectual power and expansion to ever more fields” (cit. 4th ed. 1912a, p. VII). Riehl suggested clarifying the exact meaning of the concept of the general will, and of the “norms” proposed by Wundt.

Oesterreich (1923) wrote: “In contrast to speculative ethics, Wundt’s ethics are supposed to be ‘ethics of facts.’ They are built upon a detailed knowledge of the history of moral life of mankind as well as of moral doctrines. But the moral world order is ‘ever becoming, never completed’. ... The prerequisite of all value judgments and of all norms is freedom, yet understood not as a ‘metaphysical ability,’ but as ‘the empirical given the capability to choose between several possible actions.’ According to Wundt, this is something completely different. The main areas of moral life are family, law, state, and society. Wundt’s fundamental achievement in ethics consists in having broken with hedonistic utilitarianism, as well as with Kant’s formalism” (pp. 357-358).

Guski-Leinwand (2013) examined the idea of humanity in psychology at the beginning of the 20th century and the rejection of this idea when new psychological orientations appeared. She described Wundt’s understanding of humanity and the lack of an orientation towards humanity in the psychology of his successor, Felix Krueger. “The reference to ethics in psychology and generally in the humanities was included in several scientific publications up to the beginning of World War I (e.g. Jodl, 1908; Wundt, 1912).” Both these authors would have rejected the idea of innate moral qualities. After Wundt’s death, the idea of humanity was hardly ever taken up as a psychological topic.

Loh (2006) discussed Wundt’s ethics and its current importance: “Wundt is the only philosopher of ethics I know, who not only thoroughly studied history – as shown by his 10 volume *Völkerpsychologie* – but who also acquired basic interdisciplinary knowledge. ... eventually he published a conception of volitional psychology, which combined these different projects.” (p. 219). “Wundt (1912) considered – besides logic – ethics the actual science of norms as rules of the will that undergo historical changes, including their recognition. For Wundt, ethics was being empirical and normative at the same time. ... I want to point out that Wundt did not exhaust his own conception of the will for his ethics.” Loh appreciated essential points of departure in Wundt’s volitional psychology and maintained the following: the conception is aligned with universal history; it includes pre-human forms of life; it takes forms of evolution and devolution into consideration; and, it has a systemic form in its connection of volitional and affective processes. A continuation of Wundt’s ethics could centre on the consequences of his volitional psychology. Wundt did not name criteria for his differentiation of imperatives, both those of compulsion and freedom, nor did he explain his background assumptions. “If, according to Wundt, freedom means the capability to make a reasonable choice, then this choice depends on the capability to consider alternatives.” A post-Wundtian ethics could be “less imperative and rather more advisory.” (pp. 230-231). Loh recognized the extraordinary importance of Wundt’s work for research on ethics (for more reviews, see Fahrenberg, 2011).

The reviews cited above make clear that Wundt contributed much more than merely compiling historical sources and recent philosophical and psychological discussions. He presented a new conception that developed philosophical lines of reasoning and empirical-psychological points of view as two complementary perspectives. While writing *Ethik* Wundt seemed to increasingly deal with Leibniz, whom he had cited before quite often, but only briefly, mainly in his *System der Philosophie*. The essential affinity of Leibniz’s thought to his own is evident from his essay from 1917 on Leibniz. For Wundt, Leibniz is the philosopher in Germany who perfectly expressed the spirit of the Enlightenment. Leibniz’s principles of ethics, freedom, common welfare, and justice are essential and leading the way for Wundt’s own conception. “From the new idealism arises a new normative ethics, which becomes the foundation of law inspired by moral ideas. Leibniz did not work systematically on ethics. He only expressed his ideas on ethics on rare occasions, but his mature legal works are thoroughly inspired by those ideas.” (1917, p. 112). “It is the idea of development, which is in every aspect of the *Monadology*. The entire world is made of subsequent developmental stages. From the lowest to the highest beings, it passes through all possible degrees of clarity in relation to ideas. The individual soul is subject to no less than the law of perfection. With the help of experience, the ideas, initially vague, ascend in the soul to ever increasing clarity. ... Yet these truths are not, as Descartes and the English intellectuals supposed, innate as full-fledged knowledge, but exist merely as vague instincts. Here, Leibniz relied on the common feeling of humanity, the instinct of sociability, and the feeling of dignity and decency, which mankind possesses even without education, but which are reinforced by education and experience. Thus, the knowledge of morality, like all knowledge, actually consists in the increasing clarity of initially vague ideas. Leibniz made a point that was previously missing in ethics, despite a distant model of it in the natural conditions of moral life, namely in religious forms, that is, the striving for an ideal.” (pp. 133-134; see the extensive discussion of Leibniz’s influence on Wundt’s psychology, philosophy, and ethics, Fahrenberg, 2016a, 2017).

Looking back on his works on ethics and cultural psychology, Wundt resolutely positioned himself vis-à-vis his guiding topic in discussing ethics, namely, the development from idealism to ethical individualism with its modern progression to egotistical utilitarianism, that is, an uninhibited egoistic morality. But one has to acknowledge that Wundt neither explained

actual moral conflicts on the basis of examples from everyday life, nor did he deal with principles related to the “weighing of conflicting values.” Thus, he did not discuss social conflicts. On the other hand, he expressed his opinion on many issues in various fields of life and criticized some outdated conditions in need of reform while also expressing his expectations and hopes. In contrast to this extensive and well-informed *Ethik*, which often remained dry because of the lack of vivid, even drastic, examples, is Wundt’s rectorate speech at Leipzig University (1889c) in commemoration of the French Revolution with its engaging discussion of human *rights* and *duties*, similar to recent discussions on such topics (Helmut Schmidt, 1998). For a better understanding of Wundt’s social and political attitudes, one would have to consider the living conditions of a civil servant and professor at the University of Leipzig in the Kingdom of Saxony at the turn of the century in 1900 as well as his personal context as a committed liberal in his Heidelberg years (cf. Chapter 2).

In his discussion of the freedom of will, Wundt does not follow Kant’s doctrine of the twofold definition of volitional acts, namely, as physical processes subdued to natural causality on the one hand, and as internal acts of will that are free from any causality and only determined by an abstract “*intelligible*” character (i.e. the human mind reflecting on itself) on the other hand. Wundt distinguished between two categorial perspectives as well, and he also assumed the natural causality of brain processes; however, he understood the mental processes as determined not by an intelligible, but by the *empirical* character of man – the volitional act is subject to the principles of *psychical causality*. From a psychological perspective, realized actions are determined by the preceding development of the will, i.e. caused by it and as such considered deterministic, but without making exact predictions. Wundt considered the empirical character to be the effect of a sum of causal conditions, whereby every volitional act leaves behind a disposition for similar volitional tendencies; however, a kind of self-education could take place as well. In the *Grundriss* (1920, p. 405), Wundt wrote on volitional processes and the principle of heterogony of purposes. This principle appears in consequences of actions, which extend beyond the initially intended purpose and create new motives that possibly lead to unexpected consequences. Purposes are thereby multiplied, and an ever-growing organization, i.e. a chain of motives, emerges through self-creation. This principle is essential for the understanding of volitional processes, especially in the field of ethics.

Wundt’s subtle discussion of the freedom of will is related to his epistemological position, i.e. the psychophysical parallelism and resulting perspectivism. This discussion on free will can be interpreted as an attempt to mediate between Kant’s apriorism and empirism, between determinism and indeterminism. The moral commandments are lawlike results of universal intellectual development, yet neither rigidly fixed, nor simple consequences of varying life conditions. Wundt totally rejects individualism and utilitarianism. From his perspective, only the universal mental life is valid as an end in itself. Ethics constituted an essential part of Wundt’s thinking, allowing further insights into his view of mankind, and thus also into his preoccupation with *Völkerpsychologie*.

3. 8 Epistemology and Methodology

3. 8. 1 Introduction

Epistemology is a branch of philosophy that deals with general logical and empirical requirements for the formation of knowledge. In contrast, traditional metaphysics progresses to the “last” questions, the answers of which are based on ontological concepts such as mind and nature, soul and matter, reality and possibility, temporality and infinity, freedom and necessity, as well as on categories such as space and time, form and matter, act and potency, essence, being, substance, actuality, etc. Furthermore, it encompasses all basic (absolute) prerequisites of cognition, knowledge, and volition, thus including all fundamental determinations of man. From the perspective of empirical psychology, questions about being as actual existence and being as such, about the meaning of the entirety of reality or the possibility of a consistent knowledge of the world, are of little interest, but rather fundamental anthropological questions such as “What is ‘the mental’?” “Is there a difference or a connection between consciousness (mind) and matter (mind-body problem)?” “What is the special quality of man?” “Did humans emerge by biological evolution or by an act of creation?” “Do they have an immortal soul?” “Is there freedom of will?” “How can the difference to other higher forms of life be defined?” Even if it is disputed that these questions can be answered consistently, individual convictions concerning their possible answers had and have profound influence as presuppositions or frames of reference that direct theoretical positions and research. Undoubtedly, convictions regarding the mind-body problem, the assertion or denial of a substantial principle of the soul, or the definition of the mental/mind also have consequences for theoretical psychology. The epistemology and thus also the methodology of psychology are linked to metaphysical questions since heterogeneous conceptions of man also have consequences for the approach in empirical research, including the justification of an adequate methodology (an overview on controversies in theoretical psychology, Fahrenberg, 2015a).

The overview of this large area of Wundt's writings has been divided into two chapters: 3.8 Epistemology and Methodology and 3.9 Philosophy (Metaphysics). This follows the strategy of Wundt's books, which focus regularly on one of these main areas. As most topics are closely related, cross-references, including some repetitions, are required. The formal logic and the epistemology of the natural sciences (*Logik*, vol. 1 and 2) as well as the history of philosophy (*Einleitung in die Philosophie*) are mostly omitted here, except for some individual references. The present chapter is dedicated to Wundt's epistemology and methodology, it follows the chapter on empirical psychology and precedes the chapter on philosophy in a metaphysical perspective, i.e. the discussion of ontological questions.

In his *Logik*, Wundt distinguished between epistemology and methodology (theory of methods) as follows: "The logical-epistemological part deals with the development of thought, its logical norms and the principles of knowledge valid for their application. The methodological part of a general methodology describes the methods of investigation and the forms of the systematic representation of overall validity. This is followed by the discussion of the methodology of the main fields of research in a number of specific sections." (*Logik*, 1919a, p. 12). Individual methods and types of methods have already been summarized and discussed in the previous chapters mainly with regard to the methods applied in the Leipzig institute including the methods of sensory psychology, neuropsychology, general psychology, and cultural psychology. However, the general methodology and research strategies were mentioned only briefly. Wundt's system of principles and some of the general concepts and categories connect the basic assumptions of epistemology with the methodology of psychology.

The Initial Situation

Wundt started with neurophysiology and then turned to experimental psychology, then to cultural psychology and finally to philosophy. Thus, epistemological and methodological questions were of extraordinary importance to him. Are physiology and psychology to be conceived of in the same way or does psychology have a special status in the theory of science? What general terms and principles of knowledge are required for scientific psychology in contrast to the simple personal experience of life and to "vulgar psychology" (called speculative psychology or "folk psychology" today)? The epistemological and methodological assumptions already present in the *Grundzüge der physiologischen Psychologie* (1874) are to be understood in the context of two basic postulates. Wundt dissociated himself from the traditional concept of "soul" by stating that conscious activity must be conceived of as a process. From the perspective of this theory of psychical actuality, the idea of a soul and certain "capabilities of the soul" ("Seelenvermögen") is obsolete. A fundamental distinction is established through psychophysical parallelism between the "natural causality" of the neurophysiology and the "psychical" causality of the psychical processes. Although Wundt emphasized that he did not view psychophysical parallelism as a metaphysical postulate, but rather as an essential heuristic assumption, he established a frame of reference from this in order to develop the epistemic principles of psychical causality, which fundamentally differ from those of natural causality. At various points in his work, Wundt explained these principles, the categories, and the relational concepts fundamental to psychology.

Against a Metaphysically Deduced Psychology

In anticipation of Chapter 3. 9, Wundt's unusual definition of metaphysics is quoted here: "Metaphysics is the attempt undertaken on the basis of the entire scientific consciousness of an age ... to gain a world view that connects the components of individual knowledge" (1907a, p. 106). He repeatedly opposed a metaphysically deduced "rational" psychology that derives the reality of the psyche from a supreme principle, i.e. either the soul as substance or as monad, or from God, the (world) spirit, the will, or from another idea. "You can be a physicist, chemist, physiologist, or, on the other hand, a lawyer, national economist, historian, without drawing conclusions about the philosophical convictions of their author from every investigation. If psychology really wants to attain the character of an empirical science without presuppositions, it must not be otherwise in this respect. Thus, one could also conclude that where this is not the case, "where the metaphysical point of view of the author can be discerned from his treatment of each problem, then it is no longer unconditional empirical science, but a metaphysical theory, which experience should serve to exemplify." (1896b, p. 22).

In contrast to the vast majority of authors of contemporary and current psychology textbooks, Wundt explained his philosophical views quite extensively. He calls for mutual critical reflection, and even the correction of such presuppositions, and therefore insists that the connection between psychology and philosophy be maintained (Wundt, 1913a). Wundt's empirical psychology is linked in multiple ways to his philosophical views. However, a thorough presentation is difficult for several reasons and requires explanations of the main concepts and contents in order to avoid misunderstandings. Creating a unified world view is a fundamental task for Wundt. However, he wants to attain it through inductive means by connecting the individual sciences into a coherent system. In this respect, his monistic objective is evident.

Reason and Its Striving for Unity

In this field, Wundt's conception of empirical science and philosophy can be considered a general guiding principle. He is convinced that in every individual science there are general presuppositions of a philosophical nature. Wundt describes them as metaphysical since they exist beyond the limits of immediate experience. Epistemology should help the sciences to detect their metaphysical elements, to clarify them, and to get rid of them to the extent possible. In this respect, psychology and the other sciences always depend on the help of philosophy, and especially of logic and epistemology. Reason always aspires to consistency of thought and has created a compelling basis for this in formal logic.

This striving for unity also entails the philosophical and empirical efforts to maintain the idea of the psychophysical unity of man, despite different approaches to experience. But human reason also aspires to a unity in the general coherence of thinking and this leads to the philosophical idea of *world reason*. The desire to recognize an ultimate world reason, however, reaches beyond the limits of science and of any possible experience. According to Wundt, this task must be addressed by philosophy: "Beyond the question about the empirical reality within the different areas of concrete being dealt with by the positive sciences, the metaphysical question arises as to the unity of being." (*Sinnliche und übersinnliche Welt*, 1914, p. 300). His metaphysics is another context of his psychology, even though he thought that it did not affect his empirical psychology which preceded the elaboration of his philosophical thoughts. On the other hand, he did not deny the intrinsic connection of the two spheres with respect to the "voluntarist tendency" that both his psychological and philosophical thinking have in common (see below).

As to empirical psychology, Wundt maintained the position that it should be independent of various metaphysical doctrines. On the one hand, it has to proceed on the basis of inductive means, to develop and combine new methods, and to follow certain principles. On the other hand, psychology must have an empirical basis in the general experience of man. Psychology should neither be derived only by deductive means from a metaphysical position, nor from scholastic definitions of concepts or naïve introspection and personal life experience. It remains a challenging task to interpret the consistency of these different levels in Wundt's thoughts and to understand its peculiar perspectivity in a system conceived as uniform. – Even today's use of concepts and terms is often inconsistent (see Glossary, Chapter 3. 1. 11). For this reason, several key concepts were explained and defined elsewhere in order to provide a consistent reference system, at least in this line of discussion (Fahrenberg, 2015a, pp. 23-126).

The chapter contains two digressions. In the first elaboration, *On the theory of categories, the principle of causality and the principle of purpose*, Wundt's formation of concepts and his views are explained, including references to Leibniz, Kant, and later authors, such as Nicolai Hartmann. With respect to epistemology and methodology, Wundt's definitions are fundamental to the aims and methods of his psychology. The theory of categories and general relational concepts, such as emergence and reduction, self-organization and self-development, complementarity and perspectivity, are usually not a part of the theory of science or the methodology of psychology although guiding the choice of research strategies. The second elaboration concerns *Psychological measurement, statistics and the mathematization of psychology*, since epistemological presuppositions are inevitably implied in the theory of measurement in psychology (psychometrics) as well. Conflicting assumptions influence the choice of the adequate method, thus affecting the methodology of psychological research and practice. At first, Wundt opposed Kant's fundamental objections against the attempts to measure states, resp. state change, of consciousness (inner experience), but later he revised his position to a large extent.

3. 8. 2 Overview of Wundt's Writings on Epistemology and Methodology

Wundt was appointed to chairs of philosophy in both Zurich and Leipzig without having studied philosophy. Thus, he cannot be classified with respect to a particular philosophical school or orientation, but rather formed his own philosophical profile. He acquired prestige as a physiologist and psychologist and was able to mediate between the empirical sciences and philosophy. The designation as "Chair of Inductive Philosophy" in Zurich expressed this expectation to act as mediator. Wundt's interest in philosophical questions and his philosophical reading obviously began in his early Heidelberg years. Apart from the quote from Leibniz on the title page of the *Beiträge* (1862), several chapters of his introductory *Vorlesungen* (1863) are indicative of this growing interest. Here he referred to the tradition of philosophy and, in the appendix to his philosophical introductory chapter, sketched out the positions of special interest to psychology, including those of Plato, and especially Aristotle, as well as Wolff, Kant, and Hegel. He wrote on Herbart, however included only a minor sentence on Leibniz, and briefly touched on Locke, Hume, and the French materialists.

The Physical Axioms and Their Relation to the Causal Principle

Wundt's first independent philosophical publication dealt with an epistemological problem in physics. In this treatise, Wundt (1866) discussed the causal principle and the theorem of sufficient reason, causal, and teleological explanation. In hindsight, programmatic traits of his later system of principles can be recognized. He examined six axioms of physics (mechanics) in their different versions before discussing the causal law as follows: "Everything that happens must be attributed to a cause

that suffices to explain it.” With regard to the *theorem of sufficient reason*, Wundt mentioned Leibniz but preferred Wolff’s formulation: “With respect to sufficient reason, we assume that no fact can be considered to be true or existent and no statement to be true without a sufficient reason for why it is as it is and not otherwise. *Nihil est sine ratione cur potius sit, quam non si.*“ (p. 88).

Philosophers stated earlier that will or personal action are examples of a causal connection insofar as the will enables that which is wanted to be foreseen. However, this is only subsequently revealed. This *regressus* and the future-oriented *progressus* are two related ideas. “We now claim that this ever recurring tendency to declare the will as the archetype (“Urbild”) of causality is the real reason for dissolving the relationship of cause and effect into that of *antecedens* and *consequens*. The will must always precede the action established by it. So, if one conceives of motivation as the ‘causality seen from within’ [Schopenhauer, 1813: The four-fold root of the theorem of sufficient reason], then it belongs to the essence of the causal link that the effect succeeds its cause.“ (p. 93). Wundt refused to accept the prevalent interchangeability of the expressions cause and effect with reason and consequence. He attributed this confusion to the fact that the obvious connection (cause and effect) is subordinated to the logical connection (the syllogism of reason and consequence).

This is the starting point for the distinction, which later became quite essential, between the chains of cause and effect on the physical side, which are classified under the causal principle as natural causality, and the “psychical causality,” which as chains of reason and consequence constitute the autonomy of conscious processes and of the entire mental world. This guiding principle is already recognizable here, still in the realm of physics and largely without programmatic consequences for empirical psychology. This text was written in Heidelberg and Wundt later added his epistemological analyses of the concept of purpose and the coordination of the causal and purpose principle. His first epistemological treatise already displayed his peculiar perspectivistic approach to analyzing epistemological questions in two ways, a logical-formal way and an empirical-psychological way. Later he extended this dual strategy of normative and empirical investigations to his conception of ethics as well. This perspectivity, that is the ability to take perspectives with a monist, not a pluralistic, intention, largely determines his psychology and his entire work. This demanding style of thinking makes understanding more difficult, but could well prove adequate for such a task.

Wundt wrote the following retrospectively (*System*, Preface 1889a, cit. 1919b, 1, p. VI): “A short time later, I worked out an outline of epistemology and metaphysics that remained unpublished since I considered it imperative to first engage more thoroughly with the different fields. The results of this work are partly included in my *Grundzüge der physiologischen Psychologie* and partly in my two works on logic and ethics. With respect to subjects discussed in the following system that that have already been dealt with in more detail in the aforementioned writings, I proceeded on the belief that I should confine myself to short outlines and to more detailed discussion of those points that were added.”

The relationship of the individual sciences to philosophy and their interdependence are the central questions of Wundt’s inaugural lectures in Zurich and Leipzig (1874 and 1875, published 1875 and 1876). A number of passages in the *Grundzüge* (1874) resulted from these thoughts. In the years that followed, Wundt published on *philosophy*, including *logic* and *epistemology*, *metaphysics*, *ethics* as well as *history* and *systematics of philosophy*, partly in essays, partly in books. A discussion on epistemology and on the methodology of psychology are included in the final chapters of the regularly revised *Grundzüge* as well as in a series of articles in the journal *Philosophische Studien* and *Psychologische Studien*, edited by Wundt.

Selected Essays and Articles

Year	Title
1866	Die physikalischen Axiome und ihre Beziehung zum Kausalprinzip. Abhandlung. Erlangen: Enke. (The physical axioms and their relation to the causal principle. A treatise.)
1883	Über psychologische Methoden. <i>Philosophische Studien</i> , 1, 1-38. (On psychological methods.)
1883	Über die Messung psychischer Vorgänge. <i>Philosophische Studien</i> , 1, 251-260, 463-471. (On the measurement of psychical processes.)
1888	Selbstbeobachtung und innere Wahrnehmung. <i>Philosophische Studien</i> , 4, 292-309. (Self-observation and inner perception.)
1889	Über die Einteilung der Wissenschaften. <i>Philosophische Studien</i> , 5, 1-55. (On the classification of the sciences.)
1892	Was soll uns Kant nicht sein? <i>Philosophische Studien</i> , 7, 1-49. (What should Kant not mean to us?)
1894	Über psychische Kausalität und das Prinzip des psychophysischen Parallelismus. <i>Philosophische Studien</i> , 10, 1-124. (On psychical causality and the principle of psychophysical parallelism.)
1896	Über die Definition der Psychologie. <i>Philosophische Studien</i> , 12, 9-66. (On the definition of psychology.)
1896	Über naiven und kritischen Realismus. Erster Artikel. <i>Philosophische Studien</i> , 12, 307-408. (On naive and critical realism. First article.)

1898	Über naiven und kritischen Realismus. Zweiter Artikel. Philosophische Studien, 13, 1-105. (On naive and critical realism. Second article.)
1898	Über naiven und kritischen Realismus. Dritter Artikel. II. Der Empirio-kritizismus (Schluss). Philosophische Studien, 13, 323-433. (On naive and critical realism. Third article. II. Empirio-criticism.)
1904	Über empirische und metaphysische Psychologie. Archiv für die gesamte Psychologie, 2, 333-361. (On empirical and metaphysical psychology.)
1907	Über Ausfrageexperimente und über die Methoden zur Psychologie des Denkens. Psychologische Studien, 3, 301-360. (On questioning experiments and on the methods of the psychology of thinking.)
1908	Kritische Nachlese zur Ausfragemethode: Archiv für die gesamte Psychologie, 11, 445-459. (Critical epilogue on the questioning method.)
1910	Psychologismus und Logizismus. Kleine Schriften. Band 1 (S. 511-634). Leipzig: Engelmann. (Psychologism and logicism.)

These publications were preceded by the two-volume work *Logik. Eine Untersuchung der Prinzipien der Erkenntnis und der Methoden wissenschaftlicher Forschung Band 1. Erkenntnislehre* (1880). *Band 2. Methodenlehre* (1883). (Logic. An examination of the principles of knowledge and methods of scientific research. Volume 1. Epistemology; Volume 2. Methodology).

Logik with Its Substantially Extended Editions

In the preface of the first edition of *Logik*, Wundt apologetically wrote in 1880: “The way in which my work was created entailed that the general methodology was carried out almost last, although the systematic purpose would have required its precedence.” (p. VI). But psychology and the other mental sciences are treated here quite briefly as well. For example, the first edition contained just under thirty pages on psychology. In the following section, the *Logik* is cited from the much expanded 4th edition (1919-1921).

Logik: Eine Untersuchung der Prinzipien der Erkenntnis und der Methoden wissenschaftlicher Forschung (1. Aufl. 1883, 2 Bände; erweiterte 2. Aufl. 1893-1895; erweiterte 3. Aufl. 1906-1908. 3 Bände, überarbeitete 4. Aufl. 1919-1921. 3 Bände, ca. 2000 Seiten.). (Logic: An Investigation of Principles of Knowledge and the Methods of Scientific Research.)

I. Band. Allgemeine Logik und Erkenntnistheorie. (General logic and epistemology.)

Erster Abschnitt: Die Entwicklung des Denkens und der logischen Normen. (First section: The development of thinking and of logical norms.)

Zweiter Abschnitt: Begriffe, Urteile, Schlussfolgerungen. (Second section: Concepts, judgments, conclusions.)

Dritter Abschnitt: Der Ursprung des Erkennens. Die allgemeinen Erfahrungsbegriffe. Die mathematischen Grundbegriffe. Der Begriff der Substanz. (Third section: The origin of cognition. The general concepts of experience. The basic concepts of mathematics. The concept of substance.)

Vierter Abschnitt: Die Prinzipien des abstrakten Denkens, der Erfahrungserkenntnis. (Fourth section: The principles of abstract thinking and empirical knowledge.)

II. Band. Logik der exakten Wissenschaften. (Vol. The logic of the exact sciences.)

Erster Abschnitt. Allgemeine Methodenlehre: Die Methoden der Untersuchung. Die Formen der systematischen Darstellung. Das System der Wissenschaften. (First section: General methodology: The methods of investigation. The forms of systematic description. The system of the sciences.)

Zweiter Abschnitt: Die allgemeinen logischen Methoden der Mathematik. Die arithmetischen Methoden. Die geometrischen Methoden. Der Funktionsbegriff und die Infinitesimalmethode. (Second section: The general logical methods of mathematics. The arithmetic methods. The geometric methods. The concept of function and the method of infinitesimal calculus.)

Dritter Abschnitt: Entwicklung und Gliederung der Naturwissenschaften. Heuristische Prinzipien der Naturforschung. Die abstrakte Mechanik. Die Mechanik der Schwere. Die allgemeinen Methoden der Naturforschung. (Third section: The development and classification of the natural sciences. Heuristic principles of natural research. The abstract mechanics. The mechanics of gravity. The general methods in natural science.)

Vierter Abschnitt: Die Logik der Physik. Die Logik der Chemie. Die Logik der Biologie. (Fourth section: The logic of physics. The logic of chemistry. The logic of biology.)

III. Band. Logik der Geisteswissenschaften. (The Logic of the Mental sciences.)

[Because of the great significance of these chapters as the ultimate version of Wundt’s psychology-related theory of science, the entire list of contents of the relevant sections is provided here.]

Erster Abschnitt. Die allgemeinen Grundlagen der Geisteswissenschaften (First section. The general foundations of the mental sciences.)

Erstes Kapitel: Das System der Geisteswissenschaften (S. 1-23). (First chapter: The system of the mental sciences.)

1. Die Entwicklung und Gliederung der Geisteswissenschaften (The development and classification of the mental sciences.)

2. Die Einteilung der Geisteswissenschaften. (The subdivision of the mental sciences.)

3. Verhältnis der Geisteswissenschaften zur Philosophie. (The relationship of the mental sciences and philosophy.)

Zweites Kapitel: Prinzipien und Methoden der Geisteswissenschaften (S. 23-143). (Second chapter: Principles and methods of the mental sciences.)

1. Heuristische Prinzipien der Geisteswissenschaften. (a) Prinzip der subjektiven Beurteilung. (b) Prinzip der Abhängigkeit von der geistigen Umgebung. (c) Prinzip der Naturbedingtheit der geistigen Vorgänge. (d) Kausale und teleologische Betrachtung innerhalb der Geisteswissenschaften. (e) Der Begriff der Gemeinschaft und der neuere Idealismus. (Heuristic principles of the mental sciences. (a) The principle of subjective assessment. (b) The principle of the dependence on the mental environment. (c) The principle of the influence of natural environment on mental processes. (d) The causal and the teleological points of view within the mental sciences. (e) The concept of community and modern idealism.)

2. Die allgemeinen Methoden und Hilfsmittel der Geisteswissenschaften. (a) Verhältnis zu den naturwissenschaftlichen Methoden. (b) Psychologische Analyse und Synthese. (c) Vergleichende Methode. (d) Der allgemeine Charakter der Interpretation. (e) Die Interpretation als induktive Methode. (f) Die Kritik. (g) Begriff des Gesetzes in den Geisteswissenschaften.

(The general methods and tools of the mental sciences. (a) The relation to the methods of the natural sciences. (b) Psychological analysis and synthesis. (c) The comparative method. (d) The general character of interpretation. (e) Interpretation as an inductive method. (f) Critique. (g) The concept of law in the mental sciences.)

Drittes Kapitel: Die Logik der Psychologie (S. 144-299). (Third chapter: The logic of psychology.)

1. Allgemeine Richtungen der Psychologie. (a) Entwicklung der psychologischen Richtungen. (b) Die materialistische Psychologie. (c) Die intellektualistische Psychologie. (d) Die voluntaristische Psychologie. (The general directions of psychology. (a) The development of psychological directions. (b) Materialist psychology. (c) Intellectualistic psychology. (d) Voluntaristic psychology.)

2. Individualpsychologie. (a) Die Aufgabe der Individualpsychologie. (b) Die innere Wahrnehmung. (c) Die Bedeutung der experimentellen Methode für die Psychologie. (d) Allgemeine Regeln für die Anwendung des Experiments in der Psychologie. (e) Die Methoden der psychischen Grössenmessung. (f) Die elementare psychische Analyse. (g) Die kausale Analyse der Vorstellungen. (h) Die Analyse der Gefühle, Affekte und Willensvorgänge. (i) Die Physiologie als psychologische Hilfswissenschaft und die Psychophysik. (Individual psychology. (a) The task of individual psychology. (b) The inner perception. (c) The significance of the experimental method for psychology. (d) General rules for the application of experiment in psychology. (e) The methods of measurement in psychology. (f) The elementary psychical analysis. (g) The causal analysis of representations. (h) The analysis of feelings, affects, and volitional processes. (i) Physiology as an auxiliary scientific tool for psychology and psychophysics.)

3. Die Völkerpsychologie. (a) Allgemeine Aufgabe der Völkerpsychologie. (b) Die Hauptgebiete der Völkerpsychologie. (c) Die Methoden der Völkerpsychologie. (Cultural psychology. (a) The general task of cultural psychology. (b) The main fields of cultural psychology. (c) The methods of cultural psychology.)

4. Die Prinzipien der Psychologie. (a) Der Begriff der Seele. (b) Das Prinzip des psychophysischen Parallelismus. (c) Das Prinzip der psychischen Aktualität. (d) Das Prinzip der schöpferischen Synthese. (e) Das Gesetz der Entwicklung und das Prinzip der Heterogonie der Zwecke. (f) Das Prinzip der Kontrastverstärkung. (g) Das Prinzip der beziehenden Analyse. (h) Das Grundgesetz der psychischen Kausalität. (i) Der Begriff der geistigen Gemeinschaft. (The principles of psychology. (a) The concept of the soul. (b) The principle of psychophysical parallelism. (c) The principle of psychical actuality. (d) The principle of creative synthesis. (e) The law of development and the principle of heterogony of purposes. (f) The principle of amplification by contrasts. (g) The principle of the relating analysis. (h) The fundamental law of psychical causality. (i) The concept of the mental community.)

5. Die Anwendungen der Psychologie. (The applications of psychology.)

Zweiter Abschnitt. Die Logik der Geschichtswissenschaften (S. 300-454). (Second section. The logic of the historical sciences.) Die Philologie. Die philologisch-historischen Wissenschaften. Die Geschichtswissenschaften. (Philology. The philological-historical sciences. The historical sciences.)

Dritter Abschnitt. Die Logik der Gesellschaftswissenschaften (S. 455-666). (Third section. The logic of the social sciences.) Die allgemeinen Gesellschaftswissenschaften. Die Volkswirtschaftslehre. Die Rechtswissenschaft. Die Prinzipien der Soziologie. (The general social sciences. National economics. Jurisprudence. The principles of sociology.)

Vierter Abschnitt. (S. 667-680): Die Methoden der Philosophie. (Fourth section: The Methods of philosophy.)

This new arrangement of the theory of science (in the 3rd edition, 1908, and the 4th edition, 1921) reflects the further development of Wundt's research program and the increasing significance of the standard methodology of the mental sciences for psychology. This structure remains largely unchanged and includes some subsections, e.g. "The general character of interpretation" and additional exposition on cultural psychology. Wundt's system of principles is the foundation and also the result of his empirical research and epistemological reflection. It never assumed a definite form, but was repeatedly revised. The nomenclature of the principles was also changed (between the *Grundzüge*, 1874 and the 4th edition of the *Logik*, 1921).

Wundt dealt with the *formal definition* of concepts primarily in his two works *System der Philosophie* (vol. 1, 1919b, 4th ed., pp. 206-338) and *Logik* (vols. 1-2). In the third volume of *Logik* (1921), he continued these reflections about the general terms and principles of knowledge in the mental sciences and especially in psychology. All editions of the *Grundzüge* include, primarily in their final chapters, Wundt's revised statements about questions on the philosophy of nature, the mind-body problem, the principles of causality and of purpose in psychological research, and most extensively about his epistemological principles of *psychical causality*. These principles constitute the core of his system of principles. More or less detailed sections on this system of principles are also contained in the *Grundriss* as well as in the *Völkerpsychologie* and the *System der Philosophie*. – The main chapters of the third edition, extended to three volumes, and especially of the *revised 4th edition* of the *Logik* (1919-1921), are essential to the understanding of Wundt's epistemology and methodology, and of his psychology as a whole.

3. 8. 3 System of Principles – An Overview

Wundt's general epistemology is constituted by a set of principles and assumptions. These include some guiding thoughts, postulates, categories, methodical principles, and heuristics. This system of principles is mainly referred to here according to the *Logik*, vol. 3 *Geisteswissenschaften* (1921, see the table of contents above), supplemented by some earlier, concise quotations from other works. Wundt did not conclusively present the principles of his epistemology as a homogeneous system. There are also textual differences between the various editions with regard to some formulations and the systematics. On a terminological level, it should be noted that Wundt used the term "system of principles" in metaphysics as well. "The second main part of philosophy, the system of principles, for which we want to maintain the name of metaphysics, deals, according to the definition given by philosophy, with the task of explaining the general results of the individual sciences in their systematic context and connecting them within a coherent system without contradictions." (*System*, 1919b, I, p. 23). "Therefore, epistemology and metaphysics can be regarded as the two fundamental sciences of philosophy ..." (p. 24). Wundt defined the principles and methods of the mental sciences (including psychology) in his introduction to the third volume of *Logik der Geisteswissenschaften*. He started by referring to the general principles of the mental sciences as a framework for psychology, before presenting the specific postulates and principles of knowledge in psychology. At the beginning he pointed out three categories that are fundamental to his understanding of the human mind: *value determination*, *purpose*, and *volitional activity*. Afterwards, these definitions were extended by postulates: the concept of the *soul* (*psyche*) in its *psychical actuality* and *psychophysical parallelism*. Besides these categories, the postulated *psychical causality* and its *principles* hold a prominent position because they are to be understood as important relational terms since they connect psychical contexts or suggest looking for such contexts. Wundt did not explicitly distinguish between the *postulates* that are indispensable for his conception and the *principles* that could at least be partially revised. The system of principles provides the whole work with a coherent epistemological foundation. It does not remain a merely "philosophical" orientation, but has methodological consequences and determines the selection and further development of the individual methods. For a better understanding of this epistemology, the two aforementioned elaborations are included at the end of this chapter: *On categories, the principle of cause and of purpose*, and *Psychological measurement, statistics, and mathematical modelling in psychology*.

Value Determination, Definition of Purpose, Volitional Activity

"As a matter of fact, there are three general features of the contents of experience. Everywhere that we are confronted with them, we relate them to a part of its mental content. These three features, which are closely related to each other since the preceding one always refers to the following one as its intrinsic condition, are value determination, the definition of purpose, and volitional activity." (1921, p. 15). "Among them, the factor of *value judgement* is the next crucial quality of the mind. From the perspective of the natural sciences, value judgements are meticulously avoided. If they occur, they seem to be added from the outside: the phenomena as such are neither good nor evil, beautiful nor ugly. Even their usefulness is not taken into consideration by theoretical science. The mental world, on the other hand, is the world of values. These can be found in the most varied qualitative modifications and degrees. The sensual, aesthetic, ethical, and intellectual values constitute primary classes of them that are more prominent, between which the most varied transitions and connections occur. All of them have in common that they shift between opposites. In the mental world, everything has its positive or negative, its greater or lesser

value.” Differences in value are unique to the mental contents, whereas on the natural side there is “the absolute equality of value of all occurrences. ... Value determinations related to physical objects are always created by taking an intellectual perspective (“Übertragung eines geistigen Gesichtspunkts”).“ (p. 44). “The mental world is the world of values” (p. 15).

The Definition of Purpose

"Each value determination is based on the definition of purpose, and not merely on a subjective one as it could be applied from purely logical motives to any causal connection, but on objectively intended purpose, which as such is linked with emotional motives and therefore also with value determinations. They give the purpose itself the meaning of an objective effective cause. ... The mental world is the realm of purpose.“ (p. 15-16).

Volitional Activity

“At last, the definition of purpose in the sense of an objective realization based on value determination is generally the product of volitional activity. The feeling from which the value determination emerges is already the volition itself, at the initial stage of its psychological development. Nature, on the other hand, is considered indifferent everywhere because it appears to be a correlation between passive objects that interact only through external forces. But, on the other hand, if we are confronted with psychical processes that we relate to real volition similar to our own, then we also infer the presence of mental contents, and accordingly such phenomena there fall completely or partly under the context of the mental sciences. Thus, this feature of volitional activity is actually the last one, which includes the other two as more detailed definitions. The mind is the realm of the will (p. 16).

Subject Reference

The subject reference, i.e. being related to a perceiving and experiencing subject, is also a fundamental category. From an epistemological perspective, this subject reference exists in general when “the entire experience in its immediate subjective reality“ (p. 14) is dealt with in psychology. Within this experience there are two approaches, the objectifying constructions of research in the natural sciences and the subject reference in psychological investigations. The mental sciences and natural sciences differ in that “the tasks of the former begin anywhere where *man as a willing and thinking subject* is an essential factor of the phenomena, and, on the other hand, in that all the phenomena in which the relations to the mental side of man are set apart, constitute the object from the perspective of the natural sciences.“ (1895, p. 18).

Wundt states that “psychology is an empirical science that is coordinated with the natural sciences, and that their views are supplementary in the sense that only together they are able to exhaust the empirical knowledge accessible to us.“ (Wundt, 1896b, p. 12). His conception would be free of metaphysics, but committed to certain epistemological suppositions, including the distinction between perceiving subject and perceived object as well as the principle of causal connection, i.e. the principle of psychical causality and natural causality (Wundt, 1904a, p. 336). In *Beiträge* (1862), Wundt quoted the postulate of sensualism as stated by Locke, however, he added the supplement given by Leibniz from the standpoint of idealism (cf. Chapter 3. 9. 3). – “But I am far from using this *intellectus* to put a whole world of innate ideas back into the soul as Leibniz did. Rather, I understand intellectus only as the fact of logical development borne of experience, in which not knowledge itself is given, but only the possibility of obtaining it.” (p. XXXII). With his concept of *critical realism*, Wundt (1896-1898) dissociates himself from other epistemological doctrines (cf. Chapter 3. 9).

General Heuristic Principles in the Mental Sciences (*Logik*, 1921, pp. 23-49):

- The principle of subjective judgement.
- The principle of dependence on the mental environment.
- The principle of the influence of natural environment on mental processes.
- The causal and the teleological points of view within the mental sciences.
- The concept of the community.

These general concepts and the principles of psychology are closely intertwined. Since Wundt understood psychology as fundamental to the mental sciences, these general principles, as well as the typical methods and tools of the mental sciences, also apply to psychology. Wundt provided the framework by pointing to psychology as a border region between the mental sciences and the natural sciences: “At first, the individual person is given to us through experience as a thinking and wanting subject. ... In principle, it must therefore be considered a self-evident condition that psychology has significance as a fundamental discipline in relation to all other mental sciences; in fact, individual psychology is simultaneously general psychology in the sense that it investigates the generally valid mental functions of the individual.” (p. 17). “Besides its relation to the mental sciences, which stems directly from its objective, the fact that man as a natural being is at the same time an object of the natural sciences, especially of physiology, is no less decisive for the status of psychology. As a result of the close connection between the psychical and the physical processes within the organism, psychology is at the same time a border region

where, on the one hand, methods similar to the natural sciences can be successfully applied, while on the other hand decisive aspects of the mental sciences come into play.” (p. 18).

The *principle of subjective judgement* refers to the conscious, intentional placing (“Hineinversetzen”) of the subject into the objects. In so doing the fallacies inherent in an individualistic conception must be avoided, i.e. the natural inclination of the observer to interpret the objects according to “his own individual personality as determined by the specific temporal and cultural conditions in which he lives,” and the ahistorical (anachronistic) application of standards of another time. “Therefore, the psychological analysis of mental processes and objective intellectual products, in addition to transferring one’s own subjective consciousness, always calls for a rethinking of one’s own personality according to the external qualities that the observer is confronted with.” (p. 28).

The *principle of dependence on the mental environment* involves inquiring into the intellectual surrounding of the products or acting personality in order to acquire an understanding of the influences, events, and actions of individuals and communities. Analysis of individual personalities and biographies demonstrates the “multiplicity of possible aspects” of the “mental environment.” (pp. 29-35). The principle of the influence of natural environment on mental processes states that “man is a natural being” and that “in everything he thinks, feels, and does, he is subject to the influences of physical nature, both those of his own physical nature and those of his natural environment.” (pp. 35-40). What is brought into focus is “not man in his abstract isolation from the surrounding nature, which also partly determines his own being, but man in his full psychophysical reality.” (p. 17). The *causal and the teleological points of view* (pp. 40-45) within the mental sciences eventually mean that all mental processes must be causally interpreted and that the impact of natural causality as well as purposive actions have to be considered within this general causal explanation, in particular “cases of causality of processes in which the purpose immediately gains an objective causal significance ...” (p. 45)

General Methods and Tools in the Mental Sciences (pp. 49-143)

Wundt explained psychological analysis and synthesis in general terms. The following sections deal with the comparative method, interpretation, heuristics, critique, and the concept of law in the mental sciences. The basic principles of the comparative method, interpretation, and critique were already presented in Chapter 3. 6. 3 on methodology in cultural psychology.

Methodological consequences arose with respect to the methods of interpretation as well as to the experimental psychology because, due to the dependence of the observer and the observed object, it could best come close to the model of “perfect experiments” of the natural sciences. The value of an experiment depends on the extent to which it is possible to methodically ensure the validity of the self-observation. Wundt wrote the following on the significance of critique for the methodology of the mental sciences: “Since value determinations are actually merely qualities of mental processes and intellectual works, and can only be transferred to other objects if these are related to beings that define purposes, i.e. to the mental world in the broadest sense of the word, this also reveals the critique as a method that is specific to the mental sciences. We want to know the objects of nature as they are, or, if this is not possible, in the way they can be understood by us. In the case of mental objects, we do not just want to know what they are, but always also whether they are true or false, good or bad, beautiful or ugly – in short, the value that is attributed to them in the narrower or wider context of mental life and mental creation.” (p. 114).

The following principles of psychical causality, especially the principle of creative synthesis (emergence), the principle of the heterogony of purposes, the principle of contrast, and principle of context, are to be considered strategic instructions for the interpretation of texts and other intellectual works (see Chapter 3.5).

Principles of Psychology

The chapter on the *Logik der Psychologie* contains a long section on the principles of psychology (pp. 240-294). Here, Wundt dealt with the concept of soul, two of his philosophical positions (or postulates), and four principles of psychical causality. Finally, he mentioned the basic postulate of psychical causality and the concept of mental community. Obviously, he also considered the three aforementioned characteristics, i.e. value determination, purposes, and volitional activity, to be general features of the mental part. He did not explain the ordering logic or underlying classification of these philosophical and psychological principles:

- The concept of the soul.
- The principle of psychophysical parallelism.
- The principle of psychical actuality.
- The principle of creative synthesis.
- The principle of development and of the heterogony of purposes.
- The principle of the amplification of contrasts.
- The principle of relating analysis.
- The basic law of psychical causality.
- The concept of the mental community.

The Concept of the Soul and Definition of Psychology

“Psychology requires, like any explanatory science, guiding presuppositions that it abstracts from the simplest experiences, so that they can be applied to all phenomena in its field. These presuppositions can consist of single concepts as well as a plurality of concepts. ... The basic general concept is usually called the concept of the soul.” (1921, p. 240-241). “The individual mind or the soul is nothing other than the connection of the mental processes ...” (1894, p. 102). “Our soul is nothing other than the mere sum of our inner experiences, our imagination, our feeling, and wanting, as put together in consciousness into a unity and, in a gradual sequence of developments, eventually raised to self-conscious thinking and free moral will.” (1897a, p. 516). As the individual soul, Wundt understood the “immediate unity of the states of an individual consciousness. For the thinking subject, this unity is a fact of self-conception; for other subjects it is assumed on the basis of objective features that reveal a unity of psychical states that is analogous to the self-conception” (1897a, p. 571). “For empirical psychology, the soul can never be anything else other than the actual existing coherence of psychical experiences, i.e. nothing that supplements this from the outside or from within” (1900, I, p. 9). The I/ego/self is “a feeling of the connection of all individual psychical experiences” in the process of consciousness. “It is a feeling, not an idea as it is often called.” (1920b, p. 268; see also *Grundzüge*, 1911, pp. 753-754).

Wundt posited the fundamental difference, which entails all others, that metaphysical psychology starts by proving or affirming its starting point, whereas empirical psychology argues “that this hypothesis has to be extracted from within the field of psychological research itself and that it therefore must not precede the investigation but has to follow it.” (1911, p. 115-116). “Therefore, as the final consideration, it remains that the soul and body are different not as such, but only in our conception which views them from a position of direct subjective experience provided by observing external nature, which itself only permits indirect, conceptual knowledge. This empirical concept of the soul is the only useful auxiliary hypothesis that we can use to explain the psychological experience” (1897a, pp. 379-380).

According to Wundt’s conviction, the soul (mind) is not to be determined structurally or even substantially, but is only to be conceived in its actuality, i.e. within the psychological experience.“ (1920c, p. 393). Soul is an expression for the inner experience that is in constant flow. Life is a unified, psychical, and physical process that can be viewed in different ways in order to recognize general laws, especially the psychological-historical laws of development. Psychical processes must be conceived as such and they have to be examined empirically. Even the inference from an act about an acting being is a fallacy since both coincide. The positing of a constant subject as the dominant cause of all individual psychical events would be “a pure fiction.” The “self” is no more than our awareness of the coherence of our experiences. If the concept of the soul, the idea of the absolute subject and other metaphysical definitions are rejected, the traditional questions as to the structures and capabilities of the soul are becoming obsolete as well. Common sense presupposes various permanent “dispositions” that partly determine mental events; these notions could well be useful, but they should not lead to the belief that they transform “the acting individual itself into a constant subject that reacts to all influences in an unalterable way.” (1894, p. 105).

Definition of Psychology

Wundt emphasized that he did not want to fundamentally distinguish between inner and external perception. He pointed to those processes of life that are accessible to external and inner observation at the same time, and in particular he mentioned two main phenomena “where the external observation is not sufficient without the inner observation,” namely sensations and movements stemming from inner impulses. Within the experience there are two approaches, the objectifying constructions of the natural sciences and the reference to the subject in psychological examinations. The so-called “inner experience” studied by psychology is nothing other “than the entire experience in its immediate subjective reality” (1920c, p. 14). In the introduction to the *Grundriss* (1920c, p. 1-2), he turned against the two traditional definitions: psychology as the “science of the soul” and “psychology as a science of the inner experience.” Psychology occupies a position at methodical borders (“methodische Grenzstellung”) and thus also has the role of a mediator between the mental sciences and the natural sciences.

Central to the definition of psychology and the underlying issue of consciousness and brain (mind-body problem) is the basic question as to the existence of man’s immortal soul. This metaphysics of the soul was the axiom of traditional psychology. By conceiving of the soul as an expression of the inner experience that is in constant flow, Wundt turned – in line with Kant – against all attempts to establish a metaphysical foundation using a concept of substance (soul) and against postulates of structures and capabilities of the soul (psyche). Thus, he basically dissociated himself from Johann Friedrich Herbart, Rudolf Lotze, and Carl Stumpf. Wundt acknowledged Herbart’s merits on several occasions, but he criticized the schematism and the ontological explanation of the capabilities of the soul. Herbart’s basic fallacy would consist in his deductive, metaphysically anchored approach. In contrast to this, Wundt wanted to investigate how far induction, i.e. the empirical studies and in particular the experiment, could also be extended into the purely psychological field.

Psychophysical Parallelism

Wundt noted: "... everywhere where there are regular relationships between psychical and physical phenomena, they are both neither identical nor mutually transformable, because they are incomparable in themselves. But they are coordinated with each other in such a way that certain psychical processes correspond regularly to certain physical processes or, as one might express metaphorically, 'run parallel to each other'." (1902-1903, 3, p. 769; 1904a; 1919b, 2, pp. 174 - 183). But instead of being content with this postulate like others, Wundt investigated the consequences. The inner experience may have its foundation in the brain functions, but there are no physical causes of psychical changes. If psychical states arise only from other psychical states, then a *psychical causality* must be postulated. The psychical and physical causality, however, are not opposed in a dualistic-metaphysical sense, but they depend on the observational perspective (Wundt, 1894; 1897a). Wundt regarded the psychophysical parallelism only as a heuristic and not as a firm metaphysical conviction. Obviously, at first he had some difficulties accepting the assumption of a complete neural representation even for the most complicated phenomena, such as the creative processes (1894; cf. the Wundt-Meumann controversy, Fahrenberg, 2011, pp. 396-399). "I consider the metaphysical parallelism to be just as untenable and arbitrary as Cartesian dualism or Berkeley's idealism." (1904a, p. 361).

Because of his academic education and career as a physiologist and neurophysiologist, Wundt could well have been inclined to a position of scientific-materialist thought, not uncommon at the time, and encountered today as "physiological psychology," marked by a tentative or explicitly claimed reductionism. It was essential to Wundt to reject a one-sided approach and he regretted the title he chose for his book *Grundzüge der physiologischen Psychologie*. Despite the voluntarily chosen lowercase "physiologisch" (as an adjective), his intention was misunderstood. Although his "physiological Psychology" also refers to physiological aspects, it is not intended as psychology from a physiological (natural science) point of view (1896b, p. 21). "Sensation, the synthesis of sensation into representations, the association and the retrieval of representations, and finally the processes of apperception and excitation of volitional activity are accompanied by nervous activity. Other physical processes, particularly the simple and complicated reflexes, do not actually enter consciousness, but form essential preconditions of the conscious or, in a narrower sense, psychological facts." (1874, p. 858-859).

Wundt later underlined the "relative inadequacy of the heuristic parallel principle," because the task would not have been exhausted by only demonstrating the connections of the psychical and the physical processes. The tools of physiology are – not only provisionally, but fundamentally – insufficient for the task of psychology. Such a project is pointless "because it would have no understanding of the correlation of psychical processes, even if the correlation of brain processes were as clear to us as the mechanism of a pocket watch." (1902-1903, 3, p. 777; cf. Chapter 3. 3). But it must not be overlooked that physiological concepts and methods remained quite important as tools of general psychology for Wundt. He used physiological recordings as well as cardiovascular and other psychophysiological measures in research on emotions. Wundt regularly revised the extensive chapters on anatomy and physiology of the CNS in the *Grundzüge*, and he participated in the development of neuropsychology by critically discussing hypothetical systems and functional localizations. He worked on his own neuropsychological concepts, especially using a fronto-cortical representation of the apperceptive processes. Thus, brain physiology is not marginalized, but it fundamentally complements the psychology of consciousness.

Psychical Actuality

Psyche denotes a changing process of consciousness without a metaphysical principle of the soul. The soul (mind) is not to be defined structurally or even substantially. *Soul* is an expression of the constant flow of the entire experience in its immediate reality. *Actuality* of psyche/mind is a presupposition or postulate and this category *actuality* is completely sufficient, making the category *substance* dispensable. The postulate of actuality has direct consequences with respect to assumptions about humans and ethics, because a final justification based on an absolute entity, God, or another transcendent essence is no longer required. The postulate of actuality also has far-reaching theoretical consequences for the definition of psychology, because the actively organizing psychical processes are no longer explained by an underlying "carrier." The principles and laws of these compounds have to be clarified, i.e. one has to develop an empirically founded process theory using modern terms. The apperceptive compounds and volitional dynamics are characteristic to psychical processes, constituting consciousness, and determining its coherence. It is not individual elements, but rather "relating links" in apperceptive performances and in the volitional orientation of consciousness that are, according to Wundt, the main subject of psychology, both in general psychology as well as in cultural development.

About the Mental Community

Wundt distinguished the psychology of individual consciousness from the psychology of the mental community. The individual consciousness transcends its borders in two respects: the natural environment and the mental environment. In the mental (intellectual) interaction of the individual and the mental community, "new mental contents of a special value" emerge (1921, p. 289). Wundt discussed the intellectualistic and the voluntaristic views of this interaction and suggested the term mental community (or "Volksseele") to designate the reality of such psychical processes. "Insofar as representations, feelings, affects,

and volitional movements can emerge and occur without being necessarily or substantially influenced by the existence of a mental community of homogeneous individuals, they belong to the individual consciousness. ... On the other hand, language, mythological ideas, and developments of will that are effective in the forms of morality and moral beliefs are intellectual processes, whose substrate can only be regarded as a mental community, because the individual is only effective as a partial force in their formation and development. If the individual were conceived in this case as being isolated, then the psychical process itself disappears.“ (p. 292). – In today's terms, one might instead use the concepts of a higher-level system with emergent qualities, and one might instead speak of *social* rather than of *mental* community, but in doing so, a categorically important difference would be levelled out.

The Psychophysical Reality of Man

“Since man is a natural being in everything he feels, thinks, and does, he is subject to the influences of the physical nature, both those of his own physical nature and those of his natural environment. It is also convincing that these natural influences can only be distinguished from the mental influences as a result of an obvious and expedient, but ultimately arbitrary, abstraction. Man is not a unity composed of two different substances, but rather a homogeneous totality, whose qualities compel our distinguishing conceptualization to separate physical and psychical phenomena. But since they never exist as separated in reality, they cannot even be thought of as being separated. Our representations, feelings, and activities include sensory content everywhere that can only be received through the connection with physical nature. ... The organization of societies and communities is based on physical living conditions, and it is therefore never a mere mental, but always a physical organization.“ (1921, p. 35).

Further Principles of Epistemology: The *Logik der Psychologie* (pp. 240-294) contains essential sections on Wundt's conceptualization of *psychical causality* and its most prominent principles: creative synthesis, heterogony of purposes, amplification of contrasts, and relating analysis. These topics are summarized in Chapter 3. 8. 4. However, the chapters of the *Logik* that have been presented here do not contain all the important postulates and principles of Wundt's epistemology. Some of these principles originate from Leibniz and have been clarified and methodologically elaborated by Wundt, such as the idea of *psychophysical parallelism*, the *actuality* and *continuity* of mental events, and the *theorem of sufficient reason*, which Wundt developed into the coordinated strategy adhering to both the principle of cause and purpose. There are four additional postulates regarding principles to be mentioned here on systematic grounds (cf. also Chapter 3. 9).

Monism

Wundt (1874) already stated his idea of a monistic world view at the end of his *Grundzüge der physiologischen Psychologie*, leading him beyond Leibniz. Wundt connected the two perspectives into a unified metaphysical conception: the individual's experience of a homogeneous self-conception and the biological theory of evolution (cf. the introduction to the present chapter). Wundt has repeatedly affirmed the pursuit of a unified world view as an essential demand of reason and as a task of philosophy (among others 1917, 1920c), and in his epistemology he created a construction that appears suitable: two fundamentally different categorical reference systems serve the complementary, coordinated understanding of psychological and physiological aspects of the homogeneous process of human life.

Change and Development as a Guiding Principle

Leibniz already conceived of the fundamental *law of continuity* in the sense of development, which he also recognized as biological development in the animal kingdom; and he also expanded his general *law of continuity* to a general idea of development, which was also innovative in the fields of law and ethics. He is one of the early protagonists of a history of human development. The developmental theory of the mind can be regarded as the guiding principle of Wundt's entire work, including ethics. This is why his understanding of psychology included animal psychology and cultural psychology.

Dynamism

The individual's striving and the general process of development correspond to Leibniz' doctrine of active force (dynamism) in physics and also refer to the Aristotelian concept of entelechy (self-activity, activity). According to Leibniz, an active, dynamic striving (appetitus) appears in the apperceptive process that is also constitutive for self-consciousness. Active striving is the guiding idea of Wundt's theory of apperception and volitional psychology, in which he decidedly rejects the intellectualistic stance, while emphasizing the "wanting and doing." This voluntaristic tendency, i.e. voluntarism as opposed to intellectualism, is characteristic of his general psychology and metaphysics.

Perspectivity: Unity in the Multitude (unitas in multitudine)

Today's understanding of perspectivity was shaped by Leibniz and his example of the different views of the same town, each of which depends on the observer's respective point of view. For Wundt, the neurophysiologist and psychologist, the task of combining the approaches of physiology and psychology (of consciousness) was central. Wundt's (1917, pp. 117) comment on Leibniz, as previously quoted, applies to him as well: "The principle of the equality of supplementary points of view" plays an important role in his thinking as well as positions that "complement each other, but could also appear as opposites that are resolved only in a more profound view of things." (Yet both authors do not use the term "perspective" here.) The general principle of equivalent perspectives (perspectivity, perspectivism) does not mean, as might be concluded from Wundt's work and his professional controversies, a pluralistic indifference, but rather an epistemological attitude to investigate seemingly fundamental contradictions as to whether or not they complement each other from a higher-level perspective, i.e. whether they belong together, so that one could aim at a *coordinated view* of two (or even more) reference systems. The term "complementary" can be found in Wundt's work only once; he refers to doing and suffering as "complementary concepts" that are inseparably connected final elements of being (*System*, 1897a, p. 347). There are reasons to prefer the term *perspectivity* to the concept of *complementarity* used by Niels Bohr, because, except in the context of the wave-corpusele phenomenon, complementarity could hardly be interpreted in a methodological respect (cf. Fahrenberg, 2013a).

3. 8. 4 Principles of Psychological Causality and Laws of Development

Wundt has worked out a number of epistemic principles of psychology, according to which the psychological connections – within the individual's psychological processes and within mental-cultural development – have to be assessed in their independent, psychological causality. A principle is to be understood as "a simple, not further deducible precondition of connecting the facts of a field." (1911, p. 767), thus it is not a law that comprises a number of complex facts. This system of principles has several repeatedly revised versions, and likewise, corresponding *laws of development* for cultural psychology. Wundt usually distinguished four *principles* and explained them using short examples that originated from sensory psychology, apperception research, and the theories of emotion and volition, as well as from cultural psychology and ethics (1874, 1894, 1897a; *Grundzüge*, 1911, pp. 755-770; *Grundriss*, pp. 398-406; 1921, pp. 240-293; see Fahrenberg, 2011, pp. 94-98; 2013, pp. 249-288).

It is noteworthy that Wundt replaced the title of the chapter *Prinzipien der psychischen Kausalität* (Principles of psychological causality, *Grundzüge*, 3rd ed.) with *Allgemeine Grundsätze der psychologischen Interpretation* (General principles of psychological interpretation, 4th edition). However, one should critically observe that he not only replaced the terms, but also frequently revised the text; in quoting, one has to be careful to distinguish between variants. Short and relatively concise formulations can be found in the *Grundriss* and more detailed formulations in the *Grundzüge*. More elaborated presentations in articles, and particularly in the *Logik*, are even more abstract and cumbersome. Wundt also explained the logical-methodical relations between the principles, and he discussed, perhaps inspired by the respective monistic ideas in natural philosophy as conceived by his friend Wilhelm Ostwald, the relative "effective force" of these psychological compounds and connections. Based on the increased semantic content of the synthesized psychological compounds, he speculated about the concept of a progressive increase in "value" (connotative meaning) in contrast to the *law of energy conservation* in physics. Although he emphasized the merely analogical nature of these considerations, he used the term (*new*) *intellectual values* quite often in this context (e.g. 1921, p. 15, p. 44).

(1) The Principle of Creative Synthesis or of Creative Resultants ("Emergence Principle")

"As the principle of creative synthesis, I refer to psychological elements that create compounds through their causal interactions and consequential effects, which could be explained psychologically from their main components, nevertheless have new qualities that were not included in their elements. ... Each perception could be broken down into elementary sensations. But the perception is never merely the sum of these sensations, but from its connections arises something new that possesses special qualities that were not contained in these sensations. In a similar way we put together the representation of a spatial form from a multitude of light impressions. This principle proves its worth in all psychological causal relationships, and it accompanies the mental development from its first to the most accomplished stages" (1894, pp. 112-113).

"The principle of creative synthesis rules all mental formations, from sensory perception up to the highest intellectual processes. Every higher mental structure shows qualities which, once attained, could be understood by the qualities of their elements, but nevertheless do not have to be regarded as the mere sum of the qualities of their elements." (*Grundzüge*, 1902-1903, 3, pp. 778-782; *System*, 1897a, pp. 596-598, *Grundriss*, 1920c, 398-399). "By their interactions, the psychological elements create structures that have new qualitative properties and values that were not yet present in the elements, just like chemical compounds appear as something new compared to their constituting elements, except that here one could suppose an equivalence, which is not the case in the psychological field." (1894, 112; 1897a, p. 596).

“The word ‘resultants’ should suggest that there are individual, empirically detectable elements or simple connections from which such resultants emerge in an analogously fixed regularity, such as how the components of a mechanical movement produce a resultant. The attribute ‘creative,’ however, should emphasize that ... the effect... is a specific new product that is prepared within the elements, but not preformed, and that its value is new and on a higher level. In its simplest form, we encounter this principle in the formation of sensory representations. ... A sound is more than the sum of its notes ...” A sensation of harmony exceeds the effect of the individual tonal and sonic timbres ... A dissonance with the following resolution to the consonance has an emotional value that is going far beyond the components that produce it (1911, pp. 755-756). In an affective experience with dissonant feelings, more than the sum of these components is experienced. All the more, in the highest mental achievements, the whole is richer than the sum of its parts. New products, prepared in the elements, are emerging with a higher “value quality,” i.e. a semantic content of a higher level. Psychical resultants are intellectual values (1911, p. 758). An important example is given by the volitional activity that is united by the apperception of sensations, representations, feelings, and intentions to a new process, which, for example, receives new emotional elements. Even more clearly, the synthesis is revealed in the artistic imagination and the expressive modes of language. Since the quality of the resultants are not completely contained in those of the components, the deductive method of the natural sciences is ineffective in psychology and the mental sciences. Causal explanations in psychology have to be conceived of very differently from those in the natural sciences; there are no predictions to be made from a complex of causes, but one has to content oneself with detecting the causes and conditions of the effects, however it is not possible to deduce them from those.

Wundt considered “creative synthesis” the most important epistemic principle. The first version of this principle is found in the *Vorlesungen* (1863, I, pp. 435-436; cf. also 1920a, p. 183). Predecessors philosophically discussed this ability to synthesize elements as being a fundamental function of thought. Wundt, however, was the first to transform the philosophical idea into a psychological concept applicable in empirical research on apperception, volitional psychology, as well as in the psychology of language and culture. The principle of creative synthesis was the most frequently quoted of Wundt’s epistemic principles. Based on sensory psychology, Wundt advanced this principle of creative synthesis as a general principle of empirical psychology long before Gestalt psychologists. In today’s *system theory* this principle is termed *emergence principle*.

The formation of a new quality within a system is called emergence if this new quality cannot be completely traced back to the individual underlying qualities. Just as with other ideas and epistemological principles, there are some precursors who used similar formulations. “The whole is more than the sum of its parts,” was written by Aristotle in his *Metaphysics* as well as by the Chinese philosopher Lao-Tze (Laozi) in *Tao Te King* (see Fahrenberg, 2013a, pp. 263-269). Further predecessors should be mentioned in the history of ideas, from Hegel and Schelling to Marx and Engels with the idea of the “leap from quantity to quality.” The concept was renewed by the English “emergentists” in the 19th century (Lewes, J. Huxley, J. St. Mill), and then, among others, by sociologists such as Durkheim and Sorokin, and by the biologists and system theorists v. Bertalanffy, Mayr, Mahner and Bunge, Greve and Schnabel, and Laughlin. The emergence principle, just as the reverse reduction principle, became an outstanding relational concept in the theory of science (Stöckler, 1993). On the other hand, the broad use of this term was criticized, since it would be necessary to examine precisely whether or not the emergent property could be attributed to the underlying qualities, especially since such explanations have often been established in the course of further research.

(2) The Principle of the Heterogony of Purposes, of Wanted and Unwanted Consequences (Principle of Self-Development)

Consequences of action reach beyond the originally intended purpose and evoke new motives with new effects. The intended purpose always leads to side-effects and to further consequences, which themselves become purposes in their turn. This creates a multiplication of purposes, an ever growing organization by “self-creation.” Within volitional acts, subjectively intended purposes are realized, and in the course of a series of purposes “there will emerge even more new motives from the unwanted side effects the more extensive the series is,” because the gap between the intentions and the actual outcomes requires further actions (1911, p. 766). From the effects that have occurred, new motives emerge that could unfold further creative efficacy, i.e. a series of motives emerge. This principle is important for the understanding of volitional processes, especially in the field of ethics. Wundt designated the multiplication of purposes (purposive motives) as heterogony (from the Greek *hetero*, different, and *gignomai*, to originate) due to the side effects of volitional acts; this includes the modification of the originally intended purpose. As an example, he mentioned the development of Christianity, which was quite different from the original intentions. In his *Ethik* (1912a, I, pp. 284-285) Wundt wrote: “The coherence of a series of purposes ... is essentially established by the fact that the effect of each selective act is not congruous with the intended purpose that is implied in the motive due to the side effects that are never missing.”

The unintended and unwanted consequences entail repercussions with respect to the objectives and encourage new and creative actions. Here, “unwanted” consequences means much more than consequences of action that are possibly negatively evaluated. Rather, Wundt thought of the general process in which human volitional activity is dynamically developing by itself, in unfolding further components of motives from the original motives. Mental growth means that every mental context

creates new meanings and values in synthesizing the connected elements. By becoming the motive for new, mostly more comprehensively defined purposes, and by the transition of its intellectual gain to others, the content of the realized purposes is multiplied, stimulating new driving forces as well.“ (*Grundriss*, 1920, p. 404). This *self-development* results in qualitatively new products on the individual and cultural levels, a *self-creation* of meanings and values, i.e. cultural growth and the development of mental activity and intellectual life in general, e.g. in language, myth, and customs.

Examples of the heterogony of purposes would consist in the side effects of drugs, which induce new motives for the physician and the patient to alter the course of the therapy; or in the unwanted side effects of institutionalized development aid. The purposive act branches out and is subject to feedback between intended and actual events, and the consequences of acting are unpredictable.

The inspiring potential of the principle of heterogony of purposes was appreciated among others by Ernst Bloch (1956), Graumann (2006), and Janich (2006), who discussed the heterogony of purposes with regard to a general theory of action. A reference to the principle of emergence and to the heterogony of purposes can also be found in the conception of *autogenesis*, i.e. “a self-responsible organization of life and oneself.“ (Jüttemann, 1998, p. 120, 2007a, 2014a, 2016). In Anglo-American psychology, Wundt’s *heterogony of purposes* is practically unknown. Only part of this idea was expressed by the sociologist Merton (1936) when he wrote about the “unanticipated consequences of purposive social action.” His perspective is that of a sociologist, and Wundt’s seminal contribution received but a footnote.

(3) The Principle of Amplification of Contrasts and Development in Opposites (“Contrast Principle”)

There is a general tendency to arrange the subjective world according to opposites and to increase this contrast further and further. “This contrast effect is already to be observed in visual sensations, the spatial and temporal ideas, and also in the phenomena of emotional life, which can be arranged according to opposites such as pleasant – unpleasant, tense – relaxed, excited – depressed. These forces can intensify in their reciprocal relationship, which can especially be detected in the transition of feelings and affects into their opposites. However, since all psychical processes include feelings and volitional components, this principle dominates all mental activity, including the intellectual processes” (*Grundzüge*, 1911, p. 762-764; *Grundriss*, 1920, pp. 402-403; *System*, 1897a, pp. 597-598). Likewise, in many individual, historical, economic, and social processes, a contrasting development could be detected. Here it is shown, “that no development is taking place steadily in only one direction, but that an oscillation between opposing motives is a salient trait, especially if the affects are of great strength.“ (1897a, p. 598; 1894, p. 75). Aesthetic feelings also sometimes progress in this way as well.

The development in opposites is particularly evident in historical and social life. Such contrast phenomena also exist as historical periods of literature and art, or in the development of philosophical world views. The amplification of contrasts was initially a phenomenon of the psychology of sensations, then an aspect of the psychology of emotions and the will. The impression of contrasting developments in history and in political and social issues corresponds to everyday experience, as well as with regard to changing fashions in different areas. Similar phenomena seem to occur in the sciences, i.e. a change in research interests, in theoretical approaches and methods, as well as in psychology (cf. *The life cycle of psychological ideas*, Dalton and Evans, 2004). In research on cognitive styles, an attempt was made at distinguishing a tendency to attenuate contrasts (levelling) and strengthen contrasts (sharpening) when stimulus constellations (tasks) were presented.

(4) The Principle of Relational Analysis and Relativity (“Context Principle”)

This principle states that “every single psychical content receives its meaning through its relationships to other psychical contents.“ (1920, p. 400). Comparing and relating is an original psychical process that cannot be traced back or reduced to anything else. Therefore, the psychological deconstruction of conscious processes into their elements should always try to detect their relations (and relativity). The synthetic, organizing function is paralleled by an analytical, differentiating one, in which individual constituents are emphasized and related to each other, i.e. their meaning as components of the whole is realized.“ (1920, p. 400).

The timbre of a sound is the resultant of the partial tones of a sound. The timbre of the sound in turn puts each partial tone into a certain relation to both the sound itself and the *other partial tones*. The understanding of a sentence results from various associative and apperceptive connections of representations, and each part of a sentence is in turn in some way related to the other parts of the sentence and to the whole (1894, p. 118; 1911, p. 762). Wundt often used the term “relational analysis” and also distinguished the “relational comparison” and “relational decomposition.” When Wundt explained this epistemic principle, he did not explicitly mention his methodological discussion on interpretation, including the comparative method (see the sections in *Logik*, 1921). As a fundamental principle of psychology, the context principle refers to the relationships between an experience or an action and the situational context and other conditions. The relating analysis is a principle of hermeneutics in the mental sciences and also the psychological theory and practice of interpretation (see Danner, 2006; Fahrenberg, 2002; Mey and Mruck, 2010).

Summary

“The principle of the resultants therefore claims universal validity, inasmuch as there is no psychical connection that eludes it.” (1911, p. 757). “The three principles of the *resultants*, the *relations*, and the *contrasts* are therefore not independent ... but they are only generalizations of one and the same coherent content, which is always regarded from a different point of view.” (p. 764). Even the principle of heterogony of purposes is not conceived of as an independent principle (p. 766). Initially it is only a teleological transformation of the principle of the resultants due to the special conditions of the causal principles of psychical activity (p. 766). Wundt conceived of the principles as regularities of a wide range of validity, i.e. neither as simple heuristics nor as strict laws. They are principles of psychical causality and, at the same time, research strategies in psychology, as well as principles of psychological interpretation. Wundt’s abstract descriptions are becoming more vivid, for example in the *Völkerpsychologie*, in which almost every volume contains several interpretations of cultural and ethical development on the basis of these principles. The multiple applications appear in Wundt’s psychology of apperception, volition, and language, and also generally in his cultural psychology. In the textbooks on psychology, Wundt’s systems of categories and principles can no longer be found.

Developmental Laws

The developmental laws (1911, pp. 767-770) also differ from the principles of natural causality by “the factor of their integration into an intellectual development that is inherent in the individual mental process and its products.” (1911, p. 769). Wundt also assumed the existence of three relational laws of the historical and social processes, and stated laws of historical (social) resultants, relations, and contrasts (1921, p. 427). The main example, however, is the development of language. Wundt speaks of psychophysical developmental laws when certain physical conditions, the natural environment, and the material factors of life are involved in the development. One example is the development of the individual human personality. It belongs to the biological line, but at the same time it is “the simplest form of historical development,” since natural and mental life are “parts of a whole which could be discerned on the lower levels mainly from its objective or natural side, and on the higher levels from the subjective, mental side that finds its resonance in our own inner experiences.” (p. 793-794). The continuity of this system of principles demonstrates once more that, on a methodological level, individual and cultural psychology are not two different kinds of psychology.

The Basic Law of Psychical Causality

The conception of the mind-body problem based on the assumption of a psychophysical parallelism has important consequences for Wundt’s epistemology and methodology, because it entails the distinction between the psychical causality of the conscious processes and the natural causality of brain processes. For Wundt, *psychophysical parallelism* means that categorical differences exist between psychology and neurophysiology, and that psychology has to develop independent principles of knowledge. The principles of general (“individual”) psychology correspond to the developmental laws of cultural psychology. Psychology has to follow these independent principles of knowledge and has to consider the relations of mental processes and products to *values*. Since Wundt’s postulate of *psychical causality* is a central and difficult part of his epistemology, the propositions are explained in an elaboration on the system of categories and the principles of cause and purpose (see the next section and Chapter 5. 4).

An example of two incidents being combined is the discovery of fire; at first ignited by chance, then controlled deliberately. The intent to make fire was a great step in the cultural evolution of early man. Presumably, the first step was to recognize the relationship between cause and effect in the emergence of fire, for example, after a lightning strike. The second, reverse step was to look at the sparks when manipulating a flint for this purpose. Thus, the principle of psychical causality demands a coordinated causal and goal-directed, purposeful, analysis of mental processes, specifically in motivated action.

In such combinations of human activity with a preceding or simultaneous natural event, Wundt recognized a creative principle of culture, and he discerned another example of cultural products in the invention of serviceable tools. Here, an intellectual guidance emerges, which is not a force opposed to nature, but, in its original disposition, a part of nature itself. This guidance stems from the rules of one’s own thought, which reveals a coherent system of causes and effects, purposes and ends, and, thus, of values (and so it relates reflexively to the norms of one’s own activities as well) (p. 195). “The value is marked by freedom, the causality by necessity. Both are joined in the concept of value-creating causality, which, by this unity, constitutes the ultimate concept of culture.” (p. 202).

3. 8. 5 Elaboration on the Theory of Categories, the Principles of Causality and Purpose, Categories, and General Concepts

Categories do not refer to general terms of the individual sciences, but rather to fundamental, highly abstracted forms of thought. On the question “What are categories and what are they used for?,” Immanuel Kant answered: Categories are “originally pure concepts of synthesis, which the intellect a priori contains in itself and for whose sake it just remains a pure mind; only by using them is it able to understand something of the manifoldness of intuition, i.e. to even think of an object.” (*Kritik der reinen Vernunft*. Critique of Pure Reason, 1781/1983, § 10, A81/B107). According to Nicolai Hartmann’s *Aufbau der realen Welt* (The Construction of the Real World, 1940, p. 2), *categories* are “basic definitions of being with respect to its content. ... The theory of categories is the substantial examination of ontology.” (p. 2). The categories are not simple concepts of experience or intellect referring to the subject-object relationship as forms of comprehension; they are not concepts or judgements at all. “Rather, they are only related to the content of the object, in the way it appears in knowledge. ... Categories are not predicates, but they concern the principle of the object” (p. 9). “The knowledge of categories is the ultimate knowledge, because it is the knowledge that is conditioned and mediated the most, a knowledge that has already climbed the entire ladder of knowledge of concrete objects. ... Actually, the knowledge of categories is a highly complex form of knowledge. It proceeds in a regressive manner from the entire experience to the conditions of experience; it proceeds analytically, advancing from the concrete to the principle,” i.e. not from the individual to the general, as in the formation of empirical concepts (pp. 12-13).

The philosophical theory of categories aimed at an overview or derivation of the basic concepts of thought. Here, categories are not just Kant's categories a priori. To say it with expressions used widely today, the system of categories includes both the *fundamental* (general) categories and the *regional* (special) categories of the individual sciences. Fundamental categories such as space and time or the principle of causality are regarded as universally valid, whereas, e.g. the principle of purpose is confined to purposive and planful human thinking. Each discipline develops basic concepts, which indicate how to adequately conceive and combine the individual propositions or observations with regard to the respective phenomenon and the scientific hypotheses. While philosophical thinking since Aristotle, Kant, Whitehead and Hartmann, has been striving for the reduction of fundamental categories to a comprehensive “table of categories,” the attempts at compiling regional categories are incomplete and remain open with regard to developments in the individual sciences. The empirical sciences will generate new perspectives and concepts while abandoning others. Herbart was the first to suggest a number of regional categories relevant to psychology, and Wundt firmly insisted on elaborating specific categories as well as interpreting the fundamental categories *causality* and *purpose*.

Relational Concepts and Meta-Relations

The relational concepts specify how propositions (and theoretical constructs) are related and how they could be combined and expanded. Thus, relational concepts have an important function in establishing knowledge. In contrast to the simple logical conjunction of propositions, general relational concepts formulate basic relationships and principles of knowledge. These relational concepts are indispensable but may be modified in the course of research or supplemented by new and more appropriate concepts. *Meta-relations* are multireferential concepts which, for example, in the case of moral responsibility, attempt to establish a unified view of the paradox of the experienced freedom of will and the causally closed neurophysiological perspective (Hoche, 1992, 2008). Another example stems from psychophysiological research on “anxiety” which demands for integrating three distinct reference systems: self-reported experience, observed behavior, and physiological activation (cf. Wilhelm and Fahrenberg, 2018). Experienced feelings and physiological activation require two fundamentally different reference systems, and have to be characterized by many categorical and methodical definitions. Whether or not the observed or measured behavior requires a third reference system with distinct categories depends on the mode of the definition of behavioral physiology, ethology, or behaviorism.

In particular, psychology, with its difficult position between the mental sciences, social sciences, physiology, and biology, and the heterogeneous principles and methods of these fields, depends on a comprehensive system of categories. For these various contexts, psychology also requires – probably more than most other disciplines – suitable relational concepts based on general epistemology and logical-methodical analyses. Many of the controversies between the various directions of psychology and the separation of subdivisions can be ultimately traced back to the issues pertaining to adequate categories and to category mistakes (cf. Fahrenberg, 2013a, 2015a).

Category Mistakes

Transgressions of categorical limits, which are due to various prejudices and errors, impede knowledge and research on categories. Hartmann traces this back to various motives. Typical flaws include equating the categories with entities, “blatant types of categorically one-sided world views.” (1940, p. 87), and boundary transgressions, especially in applying mathematics or measurement to all fields. “It is very understandable that the great successes of mathematics in the natural sciences lead to an expansionary tendency, which already spreads by the mere inertial power of thinking habits onto fields such as physiology,

psychology, or sociology. But the consequence is a tremendous mistaking of principles for the concretum, a disastrous missing of the essence and peculiarity of the higher phenomena of being, an increasingly unfavourable relationship of knowledge and misjudging in the respective scientific branches, and eventually the collapse of entire theories.“ (p. 87). Also the transferring of categories of the mind onto the level of organic and inorganic nature is misleading by asserting an *ensoulment* of nature. “The category of purpose that is taken from human planning and acting is used again and again” with a particular preference (p. 550). Boundary transgression directed “upward” includes biologism, physicalism, materialism, and vitalism, while boundary transgression directed “downward” includes psychologism, intellectualism, idealism, personalism, teleology, and anthropomorphism. “Just as materialism violates living beings, so does biologism with consciousness and mental life in general. If the consciousness is conceived as one function of the organism among others, then it is possible to make up a phylogenetic way of its emergence based on the special processes of mutation and selection. It would not be possible to deny a certain justification of this view. Yet it does not imply an ontological pervading (“Durchdringen”) to of the special quality of consciousness, but rather presupposes this in the assumed function.“ (p. 550).

Principles of Cause and Purpose and the “Causal-Final Axis”

“Everywhere in the explanation of nature we encounter the desire to apply the demand of an inner necessity in conceiving of the external natural phenomena. This demand is expressed in two concepts: the concept of purpose and the concept of the effective cause.“ (Wundt’s *Inaugural lecture at Leipzig University*, 1876, p. 12). Wundt turned to sensory perception, i.e. the physiological and psychological theories of the perception of space, and further elaborated his epistemological considerations. “It is not the causal concept, but the principle of the reason of knowledge that is innate to us. In this sense, we can say that the law of causality originates from experience, and that it is based on the original qualities of our consciousness at the same time. The special form of coherence of phenomena by cause and effect comes from experience, but the desire to understand this coherence as general and necessary stems from the nature of our discerning mind. This is precisely why we are inclined to subordinate causality to the reason of knowledge” (p. 18).

The theorem of sufficient reason, established by Leibniz and Wolff, states: “Everything that happens must be attributed to a cause that is sufficient for its explanation,” and: “In the sense of sufficient reason we think that no fact can be considered to be true or existing and no proposition can be regarded as true without the existence of a sufficient reason [as to] why it is as it is and not otherwise.” (p. 88). Wundt (1866) argued that in people’s prescientific and everyday thinking the question of means and purpose would be much more intuitive and closer to their own experience than the more abstract thinking about cause and effect. In his epistemology, he thoroughly discussed the two interconnected concepts included in the theorem of sufficient reason, the principle of cause and purpose. He distinguished categorically the *natural causality* in physiology, to which he decidedly adhered, and the *psychical causality* evident in the conscious processes.

Causality explains the coherence of nature, including human biology, and it is the principle of scientific prediction from the knowledge of necessary and sufficient conditions. The usual scientific understanding of causality implies an energetic-material impact on the relationship of cause and effect: if a necessary and sufficient cause exists, then the result follows out of necessity, i.e. according to a strict regularity. Thus, exact predictions are possible. In line with the position of psychophysical parallelism, Wundt postulated a fundamental categorical difference. He accepted natural causality solely for physiology, but not for the psychical processes that run parallel in the brain, because *psychical* processes cannot be determined by *physical* processes, but only by the connection with other psychical processes. For this, Wundt coined the term *psychical causality*. Here, the concept – not used by Wundt – of the *causal-final axis* could apply, in order to express the perspective relationship of *progressive* (directed towards the effect) and *regressive* (directed towards the intended purpose and inquiring into the reason and consequence) points of view.

Two Reference Systems

With regard to the psychophysical unity of man, Wundt demanded a systematic and coordinated change of perspective between the investigation of the psychical processes and the physiological examination. In his epistemological discussion, which was obviously influenced by Leibniz (cf. Chapter 3. 9. 3), it is a question of complementary perspectives: neurophysiological causal chains are analyzed in terms of cause and effect, processes of consciousness with respect to means and purposes, i.e. according to the intentions and the realized goals. Both analytical points of view are categorically related as they are both complementary variations of the “theorem of sufficient reason” (Wundt, 1866, 1919a, 1919b; cf. Fahrenberg, 2011, pp. 224-ff; 2013a, pp. 87-89. pp. 98-103). The general psychology and the development theory of the mind (cultural psychology) require independent *epistemic principles of psychical causality* and categories such as *subject*, *value*, *purpose*, and *volitional activity*, which are foreign to the natural sciences. Wundt’s reflections could be summed up in the following postulate: From an epistemological perspective, two complementary reference systems with fundamentally different categories have to be distinguished and coordinated.

The principles of cause and of purpose belong to a wide terminological field, which takes up many pages of the *Historisches Wörterbuch der Philosophie* (Historical Dictionary of Philosophy, Ritter et al., 1971-2007). In the textbooks on methodology and the theory of science of psychology, there is a preference to write about explanatory laws, and causal relationships are claimed, even different levels of causality are distinguished (von Thienen, 2013). However, the term “teleology” has become uncommon. It is particularly burdened with philosophical-theological connotations. On the other hand, the opinion expressed by Ernst Mach (1885) seems to be quite widespread that there is no necessity to make a profound difference between teleological and causal investigation; “the former is simply a provisional one.” (pp. 65-66). In biology, a long discussion has resulted in ascribing a merely heuristic function to the principle of purpose. The bionomic coordination of the functional elements of the organism is explained solely based on the causality of evolution and system theory. There are only a few biologists who are oriented towards teleology or creationism and who consider a principle of purpose or an “intelligent design” to be constitutive (cf. the detailed discussion by Rothschild on teleology in biology, 1963, and also – with a reductionist commitment – Mahner and Bunge, 2000).

3. 8. 6 Elaboration on Psychological Measurement, Mathematical Modelling in Psychology, Statistical Methods

The theory of measurement in psychology inevitably implies epistemological presuppositions. Conflicting assumptions determine the choice of appropriate method, thereby extending into the methodology of psychological research and practice. Kant's view can be interpreted as follows: as exact, in the sense of the natural sciences, is only to be considered what can be recognized with certainty on an a-priori basis, as it is the case in the field of mathematics and geometry. However in psychology, Kant did not recognize such a foundation a priori, which is more valid than empirical laws. For instance, in the inner experience, the processes of subjective perception and memory that develop in time cannot be separated from each other with certainty. In the constant flow of the psychical life, the relations are to be determined only in their temporal dimension. An experimental theory of psychology based on experiments must remain far behind the actual natural sciences, because the necessary deconstruction of the inner experience only takes place by thinking, and it is not possible to isolate and measure its components. Psychology does not have the foundations required for an a priori knowledge basis and therefore it also lacks the possibility of a mathematical construction of concepts and laws. Therefore, psychology remains a *descriptive* science and cannot become an *exact* science (Kant, 1786/1983, A V-XI, pp. 12-16; 1798, BA 15, p. 416; for Kant's further methodological discussion on the methodology of psychology, see Chapter 3. 5).

In the introduction of the *Grundzüge*, Wundt (1874) contradicted Kant's position that a measurement of states and changes of consciousness is impossible. Wundt was more optimistic and pointed to the achievements in psychophysics. As the main result of his psychophysics, Fechner reported: “In short, although properly understood, one could say that the psychical intensity is the logarithm of the corresponding physical intensity, and progresses in arithmetical relation when this progresses in a geometric one” (1851, II, p. 375). Wundt (1874, pp. 5-6) commented: “Kant has already declared that psychology is not capable of ever being elevated to the rank of an exact natural science. The reasons he provided have since then been repeated quite often without new ones being added. First, Kant argues that psychology cannot become an exact science, because mathematics is not applicable to the phenomena of inner experience, since the pure inner experience in which the mental phenomena are constructed has only one dimension with respect to time. Second, however, it cannot even become an experimental science since the multiplicity of inner observation cannot be changed voluntarily, and another thinking subject could be subjected even less to our experiments according to our intentions; the observation itself is altering the state of the observed object. The first of these objections is erroneous, while the second is one-sided at the least. In fact, it is not true that the inner processes have only one dimension, namely time. If this were the case, however, it would not be possible to speak of their mathematical representation, because this would always require at least two dimensions, i.e. two variables that can be subsumed in the quantitative term. However, our sensory impressions are intense representations that are lined up in time.”

Wundt mentioned Herbart's attempts that “clearly shone light on the possibility of applying mathematical approaches in this field ... What Kant puts forth as his second objection, namely that the inner experience evades experimental exploration, is concluded from the purely internal course of representations, for which in fact the validity of that objection cannot be disputed. Our representations are indefinite quantities, which are only accessible to an exact observation if they are transformed into definite quantities, i.e. as soon as they are measured.” Wundt referred to the encouraging scientific successes of Fechner's psychophysics, the precise chronometry of the components of complex reaction times, and, in line with Herbart, pointed to the dimension of the intensity of psychical changes, thus rejecting Kant's argument that conscious processes, without being isolated from each other, are progress only in time and not in space. – However, the categorical distinctions, essential to the mathematical construction that Kant was referring to, are not met precisely.

Kant's statement against the possibility of psychology as an *exact* science was often misunderstood as a rejection of a scientific psychology at all without noticing Kant's distinction between *exact* and *descriptive* science. It should be remembered that at Kant's time even chemistry was considered not anything more than a descriptive science.

In the controversy about the measurability of conscious processes, which was taken up by Zeller (1882a, 1882b), the Leipzig philosopher, Wundt toned down his initially optimistic view. Although he regarded the psychological measurement as the “vital question of experimental psychology.” (1883b, p. 251), he admitted that measurement is only successful in the most elementary psychical processes and the establishment of absolute measures or constants is impossible (p. 255). “A successful measurement of psychical processes is only possible if it refers to the most elementary processes” (p. 254). The various positions on the measurement of psychical processes (Kant, Herbart, Drobisch, Wundt, Zeller, Tannery, Helmholtz) have been discussed in detail elsewhere (Fahrenberg, 2011, pp. 416-432; 2015a, pp. 184-184). Helmholtz’s (1887) essay *Zählen und Messen. Erkenntnistheoretisch betrachtet* (Counting and measurement from an epistemological perspective) avoided making statements about *psychological* measurements, leaving it to the reader to detect critical allusions to both counterparts, namely Zeller and Wundt. This essay probably contributed to the fact that Wundt qualified his own opinion about the measurability of conscious processes and gradually approached Kant’s sceptical view. Heidelberger (1999) argued that this controversy was brought to an end by Helmholtz’s (1887) contribution – ultimately, it is said, in Kant’s favor. However, Heidelberger’s interpretation that Wundt had completely distanced himself from Fechner’s “Mass-Prinzip” is not tenable. Two long chapters on psychophysics containing numerous mathematical formulations in the 6th edition of the *Grundzüge* (1908), and on methods of measurement in the *Logik* (1921, pp. 173-194) show the opposite. However, Wundt made a restriction: “The basic precondition of all measurability now consists in the possibility to attribute the ratios of quantities to numerical ratios” (*Logik*, 1919a, I, p. 245). Here, it is still not perfectly clear whether he is, in today’s terminology, actually referring to an interval scale; i.e. a metric measurement in the narrower sense, in contrast to an ordinal scale with a rank-order of magnitudes. The fundamental question as to the exactness, which is related to the necessary isolation and homogeneous repetition of the processes and the precise mathematical formulation of concepts, remains without a convincing answer. Could self-observation lead to a formally unequivocal, reliable, and universally valid knowledge as it is the case in the field of mathematics and geometry? Wundt mentioned further restrictions: psychical quantities are only exactly comparable on the condition that they are “presented to the observation in nearly immediate succession and with an otherwise constant state of consciousness.” (*Logik*, 1921, pp. 178-179).

Wundt did not, apart from psychophysics, attach much importance to a mathematical formulation of psychological laws, in contrast to Herbart. Wundt opposed “the misunderstanding [...] that there must be a system of mental laws, which are of a similar exact, mathematically formulated composition as the general laws of nature, so that, if they were given, one could establish a ‘mechanics of the mind’ equal to psychophysical mechanics. Experimental psychology is not seldom confronted with this misunderstanding. One expects it at least to discover a few laws on a similar level to Kepler’s law; if it fails in discovering such laws, it has supposedly failed its discipline. ... Therefore, as in the case of Fechner’s law, if a simple and nearly exact formulation or a numerical determination of certain regularities is possible, then it concerns phenomena whose dependence on physical conditions plays a sufficiently important role in order to make the psychical processes sufficiently simple and regular. Therefore, such possible formulations of laws in mathematical form are of relatively subordinate importance to actual psychology. The main reason, however, why there are no laws by Galileo or Kepler in the mental field, and never will be, is not the immense complexity of the conditions of mental life itself, as is usually assumed, but its qualitatively different condition and the consequently completely different nature of the causal problems.” (1911a, II, pp. 89-90). Psychophysics, which relies on auxiliary physical methods, i.e. definitions of stimulus parameters, remains the main field of “psychological measurement.”

Among the psychophysical measurement methods used by Fechner and Wundt, there were elementary descriptive statistics (frequencies, means, dispersion, and average error) to control for reliability and stability of findings. A testing of statistical hypotheses was not carried out since this methodology was not yet available. Wundt pointed to the considerable use of population statistics for sociology and practical psychology quite early. As examples, he mentioned the statistics on causes of death and on the age distribution of marriages, and he stated that the facts of everyday observation supply psychology with important source material “whose importance we are hardly able to estimate yet.” (1862, p. XXVI; 1863, I, p. 21, p. 56 and II, pp. 409-413). In *Völkerpsychologie*, some statistical data appear as well, but Wundt confines their field of application: “In fact, the statistical method is just an exact application of the comparative method in general. The statistical procedure extends to all fields accessible to its application, so it is in no way special to the social sciences.” (p. 73). Statistical methods, thus, are only of relatively limited use and accordingly have a limited role in Wundt’s later research.

The controversy on measurement (psychometrics) and mathematical construction (modelling) in psychology remains unsettled. Apparently, there is a fundamental division in contemporary psychology on this issue, without any convincing solution or synthesis to be found. The demand for or rejection of measurement and mathematical modelling plays an important role in the confrontation between major directions in psychology. The textbooks in this field on methodology and statistics for psychologists scarcely explain the underlying controversy, and the historical origin of this debate in Kant’s and Wundt’s writings has been largely forgotten.

3. 8. 7 Reception and Comments

Wundt's publications on epistemology have rarely been reviewed, however some of his essays were more often reviewed than the volumes of the *Logik*. The first major controversy arose from Wundt's rejection of the emerging empirio-criticism and positivism, which Wundt addressed with his *critical realism*. Later, there was an interesting comment by the neo-Kantian Natorp (1912), who wrote the book *Allgemeine Psychologie nach kritischer Methode* (General psychology according to the critical method), in which he dealt with the well-known German psychologists of his time. Natorp criticized Wundt's initially vague or inconsistent statements about the coexistence of the physical and the psychical aspects. Wundt did not understand their equality in a precise sense, as Natorp defined it: that it is "in every respect, numerical as well as with regard to its content, the same phenomenon" (p. 265). He also criticized Wundt's concept of psychical causality: it does not fulfil any single characteristic of "real" causality, but is rather an idea or a regulative principle in the sense of Kant without logical precision. Natorp neither discussed Wundt's interpretation of the theorem of sufficient reason and the supplementation of natural causality with the principle of purpose (in the sense of Leibniz) nor did he explain Wundt's perspective thinking and the system of principles.

The early biographies mainly discussed Wundt's philosophical-metaphysical views, including the postulate of actuality, the psychophysical parallelism, and voluntarism (König, 1901; Eisler, 1902; Nef, 1923; Petersen, 1925). Nef (1923), for instance, dealt with some aspects of psychical causality and the system of principles (pp. 162-165). "In the causal perspective of the natural sciences, one usually infers from the cause to the effect. Thus, it is a progressive path. Since the two operations are quantitatively equivalent, this step is possible here. But in mental life, this is different. Here, as we are dealing with qualitative values, we cannot usually predict the effects from the causes (at least for new events, and with these we are dealing with here for the time being), but, with respect to causality, we have to take the reverse course, deriving the causes from the effects. This regressive path is that of the perspective of purpose that underlies all mental sciences." (p. 163). "Thus, we see from the outset that the mental causality has teleological character, that it is subordinated to the general principle of development, and that the equivalence of cause and effect has no validity for it, because qualitative values are of decisive significance here, not quantitative measures." (pp. 162-163).

Wundt endeavoured to study the categories of psychology more than other psychologists. But Nicolai Hartmann (1940, 1950), the outstanding philosopher of the theory of categories, obviously did not know Wundt's work since he did not comment on it. The contemporary reviews mainly discussed Wundt's conception of psychical causality, often disapproving and presenting it as obsolete. The assumption of a (psychophysical) parallelism was relatively common in the textbooks at that time, alongside traditional dualism, but in contrast to Wundt, no consistent methodology was developed. Thus, Wundt's conception, attached to that of Leibniz, with the epistemologically substantiated distinction and combination of the psychological with the physiological reference system, was hardly appreciated. Only a few reviewers highlighted the basic trait of Wundt's argumentations and perspective style of thought.

In contrast, Wundt's postulate of the *actuality of the mind* drew a relatively large amount of attention, and in some reviews his statement was vigorously rejected. If psychical processes (consciousness) are no longer conceived of as a realization of "the soul," but as "pure actuality" in the flow of sensations, representations, and feelings, without the instance of an experiencing self, then this postulate has far-reaching consequences for epistemology and the methodology of psychology, as well as the conception of man (Menschenbild) and for the foundation of morality. At that time, Wundt provoked polemic reactions against this "psychology without soul" or the "denial of the soul." (among others from Besser, Geysler, Gutberlet, Willy, Rabus, and Klimke), and his work was judged not to be suited for the Roman-Catholic population (Fahrenberg, 2011, 2015; see also Chapter 3. 9 on Philosophy).

Wundt's system of principles was not presented in a coherent, epistemological and methodological way. The *principle of creative synthesis* is sometimes quoted nowadays as a general principle of emergence since it preceded the *principle of supra-summativity* in *Gestalt psychology*. Furthermore, in the secondary literature on Wundt there is neither a detailed description of the four principles of psychical causality, nor a discussion of their derivation, persuasiveness, evidence, and applicability. Obviously, these are also general principles or at least heuristics of psychological interpretation. In psychological literature on the methodology of interpretation, there is no reference to Wundt whatsoever. Wundt's four principles were included in a presentation of general relational concepts: *context*, *contrast*, *interaction*, *emergence*, *reduction*, *self-organization*, and *self-development*, as well as the *meta-relations complementarity* and *perspectivity* (Fahrenberg, 2013a, pp. 116-118, pp. 249-297).

Elaborated discussions on Wundt's epistemology and philosophy as related to empirical psychology were contributed by Saulo Araujo (2016) in *Wundt and the philosophical foundations of psychology* and by Alan Kim (2016) in the *Stanford Encyclopedia of Philosophy* (Internet resource).

Araujo discussed the intellectual influences on the young Wundt in detail, especially by Kant and some similarities between Wundt's conception of philosophy and German Idealism. In the present context, *The Idea of a Scientific Philosophy*, (Chapter 4) with sections on *Logic and Theory of Knowledge*, *The Logical Evolution of Knowledge and the Concept of Experience*, *Categories of Scientific Knowledge* and *Beyond Kant, Neo-Kantianism and Positivism: A New Idealism?* are highly

relevant. Araujo summarized: “In this chapter, I have tried to show that the theoretical principles of Wundt’s mature psychological project are grounded in his theory of knowledge. First, the very possibility of a psychological science depends on the general evolution of human knowledge, in which the particular sciences occupy an intermediate position. Second, the idea of a scientific psychology rests upon his theory of experience, which also belongs to his theory of knowledge. Third, the theoretical principles of psychology are consequences of previous epistemological assumptions. Fourth, Wundt’s voluntarism expresses the unity of his psychological and epistemological tenets.” (p. 208).

Araujo’s reappraisal of Wundt’s philosophical foundations is a highly differentiated investigation and traces the many intellectual influences that led to Wundt’s mature conception. Another chapter presents an analysis and interpretation of how Wundt rejected his early conception of conscious and unconscious processes and the assumed “logic of the unconscious.” This discussion deserves some interest from a historical point of view, although it is not relevant for Wundt’s conception from 1874 onwards or for his mature work. Araujo had been particularly interested in this aspect in the development of Wundt’s psychology. However, the frame of reference is the Kantian and the philosophy of the 19th century. There are a few hints to Leibniz’ influence, i.e. the law of continuity, apperception, and the parallelism principle. A footnote (pp. 194-195) reads: “It is worth noting here Leibniz’s influence on Wundt. His first elaborations of the parallelism principle were explicitly associated with Leibniz’s doctrine of pre-established harmony ... Moreover, he gave a talk about the significance of Leibniz to his time (GWL) and wrote a book to commemorate the 200th anniversary of Leibniz’s death, in which he showed similarities between his own thought and Leibniz’s (LEI). Nevertheless, the details of this relationship deserve further investigation.”

Leibniz’ doctrine indeed had an essential influence on Wundt’s epistemology and psychology (Fahrenberg, 2016a, 2017). It is interesting to learn about such relationships and to further extend the archival search to Wundt’s lecture notes and handwritten excerpts. At the *University Archives*, Leipzig, there is an excerpt written by Wundt on the concept of *Apperception*. This excerpt is not dated, but it may be possible to eventually learn about the year of its writing and to acknowledge more precisely at what time Wundt paid more attention to Leibniz’ philosophical psychology, e.g. regarding perception and apperception, and perspectivism.

http://histbest.ub.uni-leipzig.de/rsc/viewer/UBLNachlassWundt_derivate_00005263/na_wundt_2_2_4_b-15_001.tif

Kim (2016) also commented aptly on Wundt’s epistemology, on “monistic perspectivism.” (also without referring to Leibniz), and on psychology in its relation to the natural and the mental sciences. “Now Wundt is well aware of the common criticism that self-observation seems inescapably to involve the paradoxical identity (described in the previous section) of the observing subject and observed object. Indeed, he takes pains to distinguish his notion of self-observation from that of “most advocates of the so-called empirical psychology”, which he calls “a fount of self-delusions [*Selbsttäuschungen*].” ... Wundt believes that one can experimentally correct for this problem by using, as much as possible, unexpected processes, processes not intentionally adduced, but rather such as involuntarily present themselves [*sich darbieten*]. (L III: 162). In other words, it is in the controlled conditions of a laboratory that one can, by means of experimenter, experimental subject, and various apparatus, arbitrarily and repeatedly call forth precisely predetermined phenomena of consciousness. The *psychologist* is not then interested in the *psychophysical* connections between the somatic or nervous sense-mechanisms and the elicited “inner” phenomena, but solely in describing, “and where possible measuring”, the *psychological* regularities that such experiments can reveal, viz., regular causal links within the domain of the psychical alone (L III: 165). According to Wundt, psychological experiments thus conceived accomplish in the realm of consciousness precisely what natural-scientific experiments do in nature: they do not leave consciousness to itself, but force it to answer the experimenter’s questions, by placing it under regulated conditions. Only in this way is a psychological *observation* as opposed to a mere perception at all possible in the scientific sense, i.e., the attentive, regulated pursuit of the phenomena (L III: 165).” (Kim, Internet Resource, 2016).

“As we have seen, Wundt was concerned not only with expanding the set of known psychological facts, but also with interpreting them within an appropriate explanatory framework. Of course, the necessity of establishing such a closed framework distinct from physiology amounted to distinguishing psychological causality from physical causality in general, and hence psychology from the natural sciences altogether. But psychology has to be defined against two other areas of “scientific” (*wissenschaftlich*) inquiry; first, in its *völkerpsychologisch* dimension, against the *Geisteswissenschaften* or “human sciences”, and second, against the non-psychological domains of philosophy. As these relationships are laid out below, it must always be remembered that although these four areas – psychology, philosophy, natural science, human science –are irreducible, this irreducibility is not a metaphysical or ontological one, but merely one of *explanatory function* (and commensurate methodology). They do not have distinct objects, but again merely represent ways of describing irreducible perspectives upon the same object, namely experience. Wundt writes: “Objects of science do not in and of themselves yield starting points for a classification of the sciences. Rather, it is only regarding the *concepts* that these objects call for that we can undertake this classification. Therefore, the same object [*Gegenstand*] can become the object [*Objekt*] of several sciences: geometry, epistemology, and psychology each deals with space, but space is approached in each discipline from a different angle. ... The tasks of the sciences are therefore never determined by the objects in themselves, but are predominantly dependent upon the logical points of view from which they are considered. (SP I: 12-3; cf. L III: 228).” (Kim, Internet Resource, 2016).

“Wundt however is crystal-clear that the PPP [*Principles of physiological psychology*] is not a metaphysical “hypothesis”. It is merely an admittedly misleading name for an “empirical postulate” necessary to explain the phenomenal “fact” of consciousness of which we are immediately aware (Wundt 1911a: 22; cf. esp. 28). By denying any metaphysical interpretation of his principle, Wundt insists that the “physical” and the “psychic” do not name two ontologically distinct realms whose events unfold on separate yet parallel causal tracks. He is therefore not an epiphenomenalist, as some commentators have claimed. Rather, the “physical” and “psychic” name two mutually irreducible perspectives from which one and the same world or Being (*Sein*) may be observed: “nothing occurs in our consciousness that does not find its sensible foundation in certain physical processes”, he writes, and *all* psychological acts (association, apperception, willing) “are accompanied by physiological nerve-actions” (*PP* II: 644). In distinguishing the empirical from the metaphysical PPP, Wundt contrasts his own view against Spinoza’s, which, according to Wundt, makes the realm of material substance exist separately from, though parallel to that of mental substance (Wundt 1911a: 22, 44-45; cf. esp. Wundt 1911a: 143-145).” (Kim, Internet Resource, 2016).

“Wundt divides up the sciences into two large families, the “formal” sciences and the “real” sciences. The former include mathematics; the latter study the natural and spiritual aspects of reality, and correspondingly are divided into the natural and the human sciences. The human sciences in turn are divided into two genera, one of which deals with spiritual processes (*geistige Vorgänge*), the other with spiritual products (*geistige Erzeugnisse*). The former just is the science of psychology; the latter includes the general study of these products as such (e.g., philology, political science, law, religion, etc.), as well as the parallel historical study of these products as they have *in fact* been created (This taxonomy is given in *SP* I: 19-20). Since the process precedes the product (cf. Kusch 1995: 132), psychology as “the doctrine of spiritual [*geistig*] processes as such” is the foundation of all the other human sciences (*SP* I: 20). Philosophy, in turn, takes *psychology*’s results and again abstracts from them the normative rules governing the organization of the human *and* natural sciences, something the latter cannot do themselves. In this way psychology as a science mediates between the sciences and philosophy.” (Kim, Internet Resource, 2016).

“For philosophers, Wundt is worth studying for two reasons. First, the arguments he made more than a century ago for the legitimacy of a non-reductionist account of consciousness offer both challenges and resources to contemporary psychology and philosophy of mind alike. Should those arguments be found lacking, there remains a second, perhaps more important reason to read him: not understanding Wundt is to tolerate a lacuna at a crucial nexus of the recent history of philosophy. Not only was he a powerful influence (albeit mostly by repulsion) upon the founders of Pragmatism, Phenomenology, and neo-Kantianism, it was also Wundt and his pioneering students who developed the empirical methodologies that first granted psychology a disciplinary identity distinct from philosophy” (Kim, Internet Resource, 2016).

Wundt’s entire work is permeated by reflections and epistemological methodological issues and, thus, intrinsically connected across the individual fields. These connections complicate the representation and interpretation of Wundt’s overall conception. In addition, Wundt gradually constructed his conception over more than half a century, however, he did not write a systematic textbook on the theory of science or on the methodology of psychology. Wundt’s conception, which he further developed with epistemic principles of psychical causality, was not paid much attention. Maybe the causal research, according to the model of the natural sciences, was thought to be more straightforward or it was in accordance with the common dualistic views about the psychical causes of physical reactions (and vice versa), as also postulated by Lotze, Stumpf, and many other well-known psychologists of the time. The principle of actuality and renunciation of the traditional concept of the soul contradicted traditional religious beliefs. Perhaps Wundt’s monism, which was based on “epistemological dualism” combined with the peculiar conception of “psychical causality,” was too complicated or its terminology might have been too misleading. “Logik” as the first word in the title could hardly have encouraged psychologists to read it back then, or even now, since they would not have expected it to contain Wundt’s methodology and system of principles of psychology. The *Logik* received surprisingly few contemporary reviews and seems to be largely forgotten by now.

Unity in multiplicity, horizon, and perspective are concepts introduced by Leibniz. Wundt, being fundamentally influenced by Leibniz’s philosophy and psychology, was still able to achieve this kind of perspectivity and interdisciplinarity mostly by himself. In contemporary reviews of his *Völkerpsychologie*, even if shortcomings were pointed out, his astonishing accomplishments in mastering the immense material were acknowledged. His books and correspondence prove his competence and his polyhistorian-like knowledge.

Without knowing the guiding principles of Wundt’s epistemology and theory of science or his philosophical positions, adequate access to his work, including cultural psychology, is not possible. The importance of these principles to him is shown by the extent to which they are repeatedly revised and by the expanded theory of science in the *Logik*. Unlike most authors of his time and of present, he explained the philosophical and methodological assumptions of his work in detail.

Again, it is quite evident why Wundt (1913a) decidedly opposed the separation of psychology from philosophy as proposed in the Manifesto by Rickert et al. (1913). Wundt feared – obviously for good reasons – that psychologists will introduce their personal metaphysical convictions to an even greater extent into psychology rather than critically discussing epistemological and ontological presuppositions.

3.9 Philosophy (Metaphysics)

3.9.1 Introduction and Overview

Metaphysics presents the content of knowledge “in general concepts and principles about being and its principles.” Its goal, though often missed, is “to establish a consistent worldview that coherently connects all fields of knowledge” (*Logik*, 1919a, I, p. 10). According to Wundt, every concept is metaphysical that stems directly from the motive to understand the coherence of the world. Wundt took up three perspectives on the topic of metaphysics. He distanced himself from the metaphysical concept of the soul and from postulates about the structure and capabilities of the soul. He was convinced that in every single science there are general philosophical presuppositions of a philosophical nature. Based on his own empirical psychology, he developed a psychological voluntarism, which he expanded to a metaphysical voluntarism. He assigned the task of uniting the “general knowledge imparted by the individual sciences into a system without contradiction” (*Logik*, 1919a, p. 9) to philosophy as a general science.

Wundt’s monistic interpretation of the world and the world reason, labelled as “metaphysical voluntarism,” is not easy to evaluate. He distinguished between empirical-psychological and metaphysical voluntarism, whose claim is comprehensive, but presented in such a way that it retains the character of a possible interpretation and does not look like an apodictic judgment or dogmatic answer to the “last questions.” Wundt himself has commented on the question about whether or not these metaphysical considerations could have determined his conception of empirical psychology. Of course, the question arises as to whether Wundt’s *psychology* could be understood at all without knowing his main *philosophical views*.

With regard to empirical psychology, Wundt maintained the position that it should be independent from the various metaphysical doctrines. On the one hand, it has to proceed by induction in order to develop and combine new methods, and to follow certain principles, on the other hand, psychology must have an empirical basis in the general experience of man. Psychology should not only be derived by deduction from a metaphysical position or from scholastic definitions of concepts or naïve introspection and personal life experience. It remains a challenging task to interpret the consistency of these different levels in Wundt’s thoughts and to understand his peculiar perspectivism in a system conceived of as consistent and *monistic*.

3.9.2 Wundt’s Writings on Philosophy

Retrospectively, Wundt (1897a, I, pp. IX-X) wrote in the preface to the second edition of his *System der Philosophie* (System of philosophy) that, by starting with psychology, he arrived at his philosophical views only later. However, he had taken time for philosophical reading during his Heidelberg years. This is evident from his *Vorlesungen über die Menschen- und Tierseele* (Lectures on the Human and the Animal Soul, 1863), which begin with an introduction to the history of the theory of the soul and refer to Plato and Aristotle, the doctrine of the capabilities of the soul, and to Wolff’s empirical and rational psychology. He mentioned Kant, Hegel, and more extensively, Herbart. In the second lecture, he referred to Locke, Hume, and also French proponents of materialism. Wundt did not discuss Leibniz’s philosophy here, in contrast to the *Beiträge*, where he mentioned Leibniz several times.

About Naïve and Critical Realism – Initial Orientation

After the epistemological essay on the physical axioms published in 1866, and the inaugural lectures dedicated to the fundamental relation between philosophy and the individual sciences in Zurich (1875) and Leipzig (1876), the book *System der Philosophie* (1st edition, 1889a) was Wundt’s next major publication in this field. Here, however, an important topic for the understanding of Wundt’s philosophy is missing, namely, his discussion with Mach and Avenarius about empirio-criticism and early positivism. Wundt’s three-part publication *Über naiven und kritischen Realismus* (On naïve and critical realism, 1896-1898) dealt with the demand for a “science without metaphysics.” Thus, Willy (1897, 1898), in his book *Krise der Psychologie* (The Crisis of Psychology), fundamentally criticized Wundt’s central concept of inner experience and called empirio-criticism “the only truly scientific position.” – The following sections about Wundt’s philosophical work are preceded by some striking excerpts from Wundt’s response and by a quotation from a later letter to Vaihinger in order to demarcate and facilitate the access to Wundt’s views.

Wundt described the underlying main assumptions of empirio-criticism and wanted to prove that this position is strongly metaphysical and dogmatic, but not purely empirical. The intention of a pure description (Mach) and the decided renunciation of the concept of causality are not maintained because each relation of dependency is already more than a description. Wundt warned against an overestimation of the principle of the economy of thought. The teleological-aesthetic aspect of the greatest

possible simplicity would result in a view that considers that which does not fit in to be non-existent if the much more important principle of “knowledge without contradictions” is repressed.

It should be acknowledged that Avenarius’s materialism refrains from any hypotheses as to brain mechanics and chemistry of system C [i.e. the CNS], and as a consequence it does not achieve more than a formal schematism of empty generality. “Eventually, the psychological point of view of empirio-criticism makes psychology obsolete as a science in its own right. For we can only speak of such, where the psychical facts present correlations in themselves that force us to look for psychical causality in some form or another. If the entire content of psychology is only a function of system C, it would be best to make an end of it quickly.” (1896-1898, III, p. 410). Wundt’s statement provoked a controversy, in which Carstenjen (1898), Gutberlet, and, siding with Wundt, Weinmann participated (cf. Fahrenberg, 2011, 2015a).

In her article entitled *Wundt, Avenarius and Scientific Psychology. A Debate at the Turn of the Twentieth Century*, Russo Krauss (2019) provides historical context and a detailed discussion of the controversy between Avenarius and Wundt about early positivism. Krauss also provides an outline of the reception of Avenarius’ thoughts and maintains that a “progressive disavowal” of Wundt’s ideas occurred in the world of scientific psychology, especially by his former students.

With the term *critical realism*, Wundt distinguished his views from those of transcendental philosophy, philosophy of immanence, philosophical idealism, mentalism, logicism, neo-Thomism, materialism, empirio-criticism, the beginnings of positivism, and philosophical phenomenology (cf. Fahrenberg, 2011, 2015a, pp. 210-212). However, he repeatedly emphasized the aspiration of reason towards unity (“Einheitsstreben der Vernunft”). According to Wundt, the position of *critical realism* does not culminate in a postulate or the absolutization of a single epistemological conviction, but rather it supplies a mediating position between extreme views. Wundt stated that his conception was free of metaphysics, but committed to certain epistemological suppositions, including the distinction between perceiving subject and perceived object as well as the principle of causal connection, i.e. natural causality and the principle of psychical causality (Wundt, 1904a, p. 336). “In line with my ‘realistic’ epistemology, I do postulate objects, that is, spatial-temporal, independently existing contents of experience as the originally given reality. I have also tried to explain that all efforts of idealistic or dualistic epistemological theories to conceive of objects as originally subjective ideas, which are thought of as objects only subsequently due to some secondary criteria, have failed and necessarily had to do so.” (1904a, p. 341). The task of empirical psychology is given by the experience in its immediate nature and its entirety as well as with regard to its mode of emergence in the subject. From the point of view of Wundt’s critical realism, inner experiences are definitely a topic (“object”) of psychology; however, methodical controls are indispensable and such control methods have to be systematically developed.

Mülberger (2012) refers to the early controversy about a crisis in psychology as discussed by Willy (1897) and Gutberlet (1888, 1898, 1903). “Throughout the discipline psychologists felt troubled by a widespread sense of fragmentation in the field. I will argue that this is due to psychology’s early social success and popularization in modern society. Moreover ... the paper shows that the first declaration of crisis emerged at a time when a discussion of fundamentals was already underway between Wundt and the empiriocriticist Richard Avenarius. The present historical research reveals the depth of the confrontation between Wundt and Willy, entailing a clash of two worldviews that embrace psychological, epistemological, and political aspects.” (Mülberger, 2012, p. 434; see also Bühler, 1927; Fahrenberg, 2011, 2015a; Hughes, 2018).

Epistemology

Wundt affirms that “psychology is an empirical science that is coordinated with the natural sciences, and that their views complement each other, in the sense that only together they are able to exhaust the empirical knowledge accessible to us.” (Wundt, 1896b, p. 12). “Physiology informs us about those phenomena of life that can be perceived by our external senses. In psychology, man observes himself, so to speak, from the inside and tries to explain the connections between the processes that this inner observation presents to him.” (*Grundzüge*, 1874, p. 1). Later on, Wundt considered this initial definition of psychology as the science of inner experience inadequate, as it could entail the misunderstanding that inner and outer experience refers to two fundamentally different objects (1986a). He emphasized the “original unity of experience” because the external and inner experience do not differ with regard to the object, but merely in the direction of their approach. “Natural science seeks to determine the qualities and reciprocal relations of objects; therefore, it abstracts ... from the subject.” Its epistemological mode is therefore an indirect, abstractly conceptual one. Psychology resolves this abstraction. It considers the subjective and objective factors of immediate experience in their interrelations. Its epistemological mode is therefore an immediate, concretely descriptive one (*System*, 1919b, I, p. 15-16). At first, all experience is inner experience: “... what we call external experience is dominated by our forms of perception and concepts.” However, one cannot necessarily deduce from this position that the coherent world view that the sciences strive at must be an idealistic one. We do not construct the world by our thinking (as speculative idealism claims), but we reproduce the objects by treating the contents of experience with our thoughts (*Logik*, 1920a, p. 414). “Objects or things are complexes of sensations independent of our will with spatial autonomy and temporal continuity.” (*Logik*, 1920a, p. 451).

Wundt’s tendency towards a dualism of inner and outer/external experience (not of body and soul) in the *Grundzüge* (1874; cf. *Vorlesungen*, 1863, I, p. 1) has evolved into a conception sounding rather monistic. Wundt himself and some of his

critics described his position with the term *critical realism*. Others recognized an idealistic tendency or even a naturalism and positivism. However, these terms are far too general and misleading to characterize Wundt's distinctions, epistemology, or methodology. He explained his position most extensively in the controversy about empirio-criticism and in *Logik*.

Wundt continuously refused to accept general classifications of his position. In a letter to the philosopher Hans Vaihinger, he wrote: "... that I have never been a Kantian, neither right-wing nor left-wing, and that the only modern philosophical direction against which I have insistently polemicized has been positivism, may it call himself now after Spencer, Avenarius, or anyone else. In particular, it amazes me that in your journal you want to bring the empirio-criticism of Avenarius back to life, which I thought I put to rest many years ago. ... So, you can understand that I cannot allow myself to be characterized as an intermediate between a left-wing Kantian and a positivist, and likewise I emphatically reject the label applied to my psychological direction, which was made up according to this false analogy" (Wundt-Nachlass, Letter to Hans Vaihinger, 1. 8.1918, <http://kalliope-verbund.info/DE-611-HS-2220545>).

System der Philosophie

In the preface to the first edition, Wundt wrote: "Nowadays, the fact that philosophical systems and especially metaphysics is over once and for all is widely considered an obvious truth. Among the philosophers who do agree with that opinion assume that the future of philosophy depends on maintaining a connection to the other sciences in order to prove its own indispensability to them by providing them a positive service. The author of this work has always been a proponent of the latter opinion. Wundt must therefore accept that both like-minded individuals and opponents are irritated by the fact that he dared to design a system of philosophy, and especially one in which a central place is assigned to metaphysics.

Of course, the work itself must justify the task it has taken on. I will allow myself to make a general remark here, namely, that I consider metaphysics neither a "poetry of concepts," nor a system of reason to be constructed from a priori valid pre-suppositions by means of specific methods. Rather, I assume that the basis of metaphysics consists in experience as its only acceptable method, which connects facts according to the principle of reason and consequence and which is applied everywhere in the individual sciences. However, I see its peculiar task in the fact that it does not confine that connection to certain fields of experience, but rather tries to extend it to the entirety of all given experiences. It is a thought already familiar to the empirical sciences that the problems of science can only be solved by means of preconditions that are not empirically given themselves. For this reason, I believe that philosophical metaphysics does not have to construct itself completely anew, but rather has to start with the hypothetical elements that individual sciences offer. It has to examine them logically to ensure their consistency, and as a consequence, unite them into a coherent totality. One may doubt whether it is appropriate to choose the old name of metaphysics for such an investigation. However, I think that if the general purpose of a science remains the same, then the change of aspects and methods must not prevent us from retaining its name as well" (Preface, cit. 1919b, 1, p. IV-V, see also the preface of the following editions quoted below).

System der Philosophie (1. Aufl. 1889, 669 Seiten. 4. überarbeitete Aufl. 1919. Band 1. 436 Seiten, Band 2, 266 Seiten).
(System of Philosophy.)

Band 1. (Volume 1)

Einleitung: Aufgabe der Philosophie. Gliederung der Einzelwissenschaften. Einteilung der wissenschaftlichen Philosophie.
(Introduction: The task of philosophy. Classification of individual sciences. Classification of scientific philosophy.)

Erster Abschnitt: Vom Denken. Merkmale des Denkens. Formen des Denkens. Grundgesetze des Denkens (First section: On thinking. Qualities of thinking. Forms of thinking. Basic laws of thinking.)

Zweiter Abschnitt: Vom Erkennen. Objekte des Erkennens. Wahrnehmungserkenntnis. Verstandeserkenntnis. Vernunft-erkenntnis. (Second section: On knowledge. Objects of knowledge. The knowledge of perception. The knowledge of the intellect. The knowledge of reason.)

Dritter Abschnitt: Von den Verstandesbegriffen. Grundformen der Verstandesbegriffe und deren logische Entwicklung. Reine Formbegriffe. Reine Wirklichkeitsbegriffe. (Third section: On intellectual concepts. Basic forms of intellectual concepts and their logical development. Pure concepts of form. Pure concepts of reality.)

Vierter Abschnitt: Von den transzendenten Ideen. Kosmologische Ideen. Psychologische Ideen. Ontologische Ideen.
(Fourth section: On transcendent ideas. Cosmological ideas. Psychological ideas. Ontological ideas.)

Band 2 (Volume 2)

Fünfter Abschnitt: Hauptpunkte der Naturphilosophie. Begriff der Materie. Prinzipien der Naturkausalität. Kosmologische Probleme. Biologische Probleme. (Fifth section: Primary aspects of the philosophy of nature. The concept of matter. Principles of natural causality. Biological problems.)

Sechster Abschnitt: Grundzüge der Philosophie des Geistes. Geist und Natur. Individuelle Seele. Entwicklungsformen des Gesamtgeistes. Geschichtliche Entwicklung. (Sixth section: Basic features of the philosophy of mind. Mind and nature. The individual soul. Development forms of the general mind. Historical development.)

Wundt's *System der Philosophie* (1897a) contains only a relatively short excursion into the concept of psychophysical parallelism and the theoretical principle of psychical causality. Important topics are excluded in the frequently quoted, revised editions of the *Vorlesungen* as well as in the short *Einführung in die Psychologie* (1911b) and the *Einleitung in die Philosophie* (1901, 1920d), mostly without providing cross-references. These gaps can be confusing if the context is unknown. "Where subjects are discussed in the following system that have already been dealt with in more detail in the aforementioned writings, I believed that I should confine myself there to short outlines and to a more detailed discussion of only the points that have now been added." (Preface 1919a, cit. p. IV-V).

Wundt provided an outline of the individual sciences, i.e. the natural sciences and the mental sciences. He pointed to the abstract, in fact hardly practicable, distinction between the sciences of mental processes and those of intellectual products. "The theory of mental processes therefore includes the more general fields of the mental sciences, which also contain the explanatory reasons for the individual intellectual products. This way, psychology, as the theory of mental products in general, constitutes the basis of all mental sciences." (1919b, 1, p. 20). He indicated the relevance of animal psychology and cultural psychology, and also mentioned the psychological view in the natural history of the development of humans and tribes as a task for anthropology and ethnology.

The task of philosophy is defined in *System der Philosophie* in the same terms as in *Einleitung in die Philosophie* (1920d, p. 75-81), before Wundt provided a more precise classification, which is important for the understanding of his position and terminology: "Philosophy shares its content with all individual sciences; but the point of view from which it looks at this content is different because it has the coherence of the sciences from the beginning in mind... Either the content of knowledge can be investigated in terms of its origin, or with regard to the systematic connection of its principles. ... They correspond to two general philosophical sciences: epistemology and the system of principles. Epistemology is divided into two parts, namely, a formal part and a real part. Formal logic, the first one, has the same relation to the theory of real knowledge as mathematics [has] to the empirical sciences within the individual sciences. ... The epistemology of the real part is divided into two areas: the history of knowledge and the theory of knowledge. ... The theory of knowledge, which together with formal logic comprises logic in the wider sense of the term, investigates the logical development of knowledge by analyzing the emergence of scientific concepts on the basis of the general laws of thought. It is divided into the general theory of knowledge, which investigates the conditions, limits, and principles of knowledge in general, and methodology, which deals with the special organization of these principles within the different fields of scientific research."

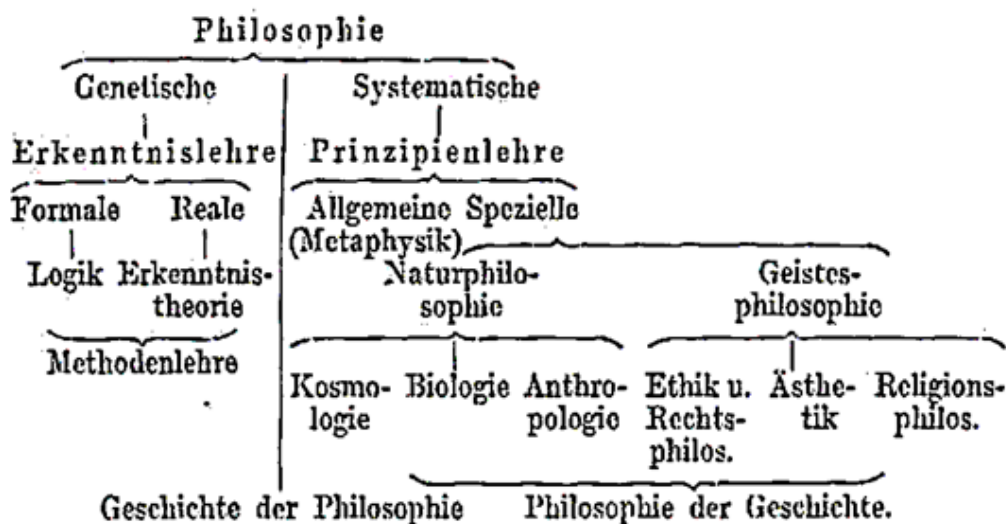


Figure 2: Taxonomy of Philosophy according to Wundt (Introduction to Philosophy, 1920, pp. 80).

“The second main part of philosophy, the doctrine of principles, for which we want to maintain the name of metaphysics, deals – according to the definition provided by philosophy – with the task of explaining the general results of the individual sciences in their systematic context and connecting them within a coherent system.“ (pp. 22-23). “Accordingly, this special part of the doctrine of principles is divided into the philosophy of mathematics, natural sciences, and mental sciences. ... Philosophical cosmology is especially opposed to biology.” Philosophy of the mental sciences “initially tries to establish a coherent conception of mental life based on psychology and with the help of the theory of knowledge. The different scientific fields related to individual aspects of mental life are then subordinated to this philosophical psychology. ... Ethics and philosophy of law, aesthetics, philosophy of religion ... From a developmental point of view, philosophy tries to arrive at a total historical view of the mental life of mankind and connect it with the general world view” (p. 24). The basic traits of the philosophy of mind are described in detail elsewhere (vol. 2, pp. 136-266). It must be noted that the general concept of *anthropology* only appears once in the text and in the overview of the *System* and *Einleitung*. Here it refers to the study of man within the philosophy of nature, and there are no references to Kant’s *Anthropologie* (1798), which was conceived within a wide philosophical and psychological horizon.

“By examining one and the same content of knowledge from different points of view, it is inevitable that the two basic sciences [epistemology and metaphysics] intertwine in many ways, and that certain concepts, such as substance, causality, and purpose, belong to both epistemology and metaphysics. ... Since with this intertwining, the essential part of the investigation into those principles, which determine the real content of experience, falls on the side of epistemology, the critical examination and continuation of hypothetical additions to reality, which was begun by the individual sciences, results automatically as a predominantly metaphysical task. This explains the often questionable state of metaphysics as well as its indispensability. Even if metaphysics were successfully banished from philosophy, it would never disappear from the individual sciences.“ (pp. 24-25).

Thus, Wundt assigned a central position to metaphysics in his system, but not as a “poetry of concepts” or a system of reason constructed a priori, but as a science of principles, general concepts, and basic laws whose method is that of connecting facts according to the principle of cause and effect, which is used throughout the individual sciences (*System*, 1919b, p.V).

In the fourth section of *System*, there is an interesting distinction and interpretation of transcendent ideas (i.e. ideas transcending experience), cosmological ideas, psychological ideas, and ontological ideas, i.e. concerning being (1919b, 2, pp. 339-436). There are cosmological ideas of space and time and their infinitude as well as the universe, matter, and natural causality. “The idea of the soul as a unity of all mental processes includes two lines of thought that correspond to two cosmological questions about the totality of the universe and about the final elements of all perceptible things” (p. 359). But the concept of the soul was not imaginary as were the cosmological ideas, but rather imbued with “a distinct character and transcendence from the beginning.” However, since the value of all questions related to the mental world and final state of our own being is much greater for us than our interest in cosmological questions ever could be, the psychological problem gains a practical relevance, which alone explains why almost all controversies pertaining to philosophical worldviews have sprung from the various attempts to solve this problem.“ (p. 362). Wundt also explained the notion of mental totality and the expansion of the notion of morality through religion.

The starting point of ontological ideas is to be found in the relationship between body and mind. This question first stimulated the idea “of a final cause for the unity of all existence, and at the same time it has constantly provoked the conflict unfolding between possible views.“ (p. 397). Wundt defined some aspects of the ontological connection within cosmological and psychological notions of unity as well as the universal notion of unity. The section ends with comments on the relation of the ontological problem to moral and religious notions. The additional discussions in volume 2 of *System* are only mentioned here and include: Basic features of the philosophy of mind; Mind and nature; The individual soul; Developmental forms of the general mind. – In this explanation of the transcendent ideas, Wundt integrated quite extensively his psychological and metaphysical conception of volitional activity. In this respect, these sections are central to the understanding of Wundt’s empirical psychology of will (Chapter 3. 5.) and his philosophical monism, and therefore they are referred to in Chapter 3. 9. 4 based on a few quotations.

Einleitung in die Philosophie

This introduction evolved from lectures at the University of Leipzig. Its goal essentially differs from that of the various works of Paulsen, Külpe, and Jerusalem, which were published under the same title. “While the aforementioned works prefer to describe the present state of philosophy – either by emphasizing personal convictions or by critically illuminating different points of view – this presentation exclusively follows the path of historical orientation. It tries to show how philosophy itself and how philosophical problems emerged in order to lay the groundwork for a systematic study of this science in its present state. ... The work only intends to serve as a guide to the threshold of philosophy, but refrains from stepping over this threshold itself ...” Wundt wanted his book to be regarded not merely as an orientation to the tasks, development, and main problems of philosophy, but rather “... as a historical and critical preparation for a kind of treatment of philosophy that emphasizes its connection to the positive sciences.“ (Preface, 1st ed. 1901, p. IV-V). This work focused on the history of philosophy and

seldom deals with the relation of philosophy to psychology. The main orientations within the individual sciences, philosophy, and ethics are presented, grouped, and arranged in corresponding classifications.

Einleitung in die Philosophie (1. Aufl. 1901, zitiert nach der 8. Aufl. 1920. 429 Seiten.) (Introduction to Philosophy.)

Erster Abschnitt: Die Aufgabe und das System der Philosophie. (First section: The task and system of philosophy.)

1. Die Aufgabe der Philosophie. Definition der Philosophie. Philosophie und Wissenschaft. Philosophie und Religion. Philosophie als Güterlehre. (The task of philosophy. Definition of philosophy. Philosophy and science. Philosophy and religion. Philosophy as a doctrine of goods (values).)

2. Die Klassifikation der Wissenschaften. Geschichtliche Übersicht der hauptsächlichlichen Klassifikationsversuche. Die drei Gebiete der Einzelwissenschaften. Klassifikation der Einzelwissenschaften. Systematische Einteilung der Philosophie. (The classification of sciences. Historical overview of the main attempts at classification. The three fields of the individual sciences. The classification of the individual sciences. Systematic classification of philosophy.)

Zweiter Abschnitt: Die geschichtliche Entwicklung der Philosophie. (Second section: The historical development of philosophy.)

I. Die Philosophie der Griechen. Allgemeine Entwicklung der griechischen Philosophie. (I. The philosophy of the Greeks. The general development of Greek philosophy.)

A. Erste Periode: Zeitalter der Naturphilosophie (7.-5. Jahrh.) Entwicklung der kosmologischen Spekulation. (A. The first period: The age of natural philosophy (7th-5th century B.C.). The development of cosmological speculation.)

B. Zweite Periode. Zeitalter der universellen Wissenschaftssysteme (5. und 4. Jahrh.) Entstehung des ethischen Problems. Platonische Philosophie. Aristotelische Philosophie. (B. The second period. The age of universal scientific systems (5th and 4th century B.C.). The emergence of the ethical problem. Platonic philosophy. Aristotelian philosophy.)

C. Dritte Periode: Zeitalter des Hellenismus (3. Jahrh. vor bis 3. Jahrh n. Chr.). Ethische Richtungen der hellenistischen Philosophie. Theosophische Richtungen der hellenistischen Philosophie. (C. The third period: The age of Hellenism (3rd century B.C.-3rd century A.D.). Ethical orientations of Hellenistic philosophy. Theosophical orientations of Hellenistic philosophy.)

II. Die christliche Philosophie. Allgemeine Entwicklung der christlichen Philosophie. Philosophie der Patristik. Philosophie der Scholastik. (II. Christian philosophy. The general development of Christian philosophy. The philosophy of Patristic philosophy. The philosophy of Scholasticism.)

III. Die neuere Philosophie. Kulturbedingungen und Hauptperioden der neueren Philosophie. (III. Modern philosophy. Cultural conditions and major periods of modern philosophy.)

A. Erste Periode: Zeitalter der Befreiung des Denkens. Entwicklung der Renaissancephilosophie. (A. The first period: The age of the liberation of thought. The development of Renaissance philosophy.)

B. Zweite Periode: Zeitalter des Kampfes der Weltanschauungen. Allgemeiner Charakter des Zeitalters der Erneuerung der Wissenschaften. Induktive und deduktive Philosophie. (B. The second period: The age of conflict between world views. The general character of the age of renewal of the sciences. Inductive and deductive philosophy.)

C. Dritte Periode: Zeitalter der dogmatischen Systeme. Spinozas Substanzlehre. Lockes Erfahrungsphilosophie. Leibniz Monadologie. Die Aufklärungsphilosophie und ihre Gegner. (C. The third period: The age of dogmatic systems. Spinoza's doctrine of substance. Locke's empirical philosophy. Leibniz's monadology. The philosophy of the Enlightenment and its opponents.)

D. Vierte Periode: Zeitalter der kritischen Philosophie und des beginnenden Einflusses der Geisteswissenschaften. Kants kritische Philosophie. Die Philosophie des 19. Jahrhunderts. (D. The fourth period: The age of critical philosophy and the beginning influence of the mental sciences. Kant's critical philosophy. The philosophy of the 19th century.)

Dritter Abschnitt: Die Hauptrichtungen der Philosophie. Die drei Grundprobleme der Philosophie. (Third section: The main orientations of philosophy. The three basic problems of philosophy.)

I. Die erkenntnistheoretischen Richtungen. (1. Epistemological orientations.)

A. Der Empirismus. Naiver Empirismus. Reflektierender Empirismus. Reiner Empirismus. (A. Empiricism. Naïve empiricism. Reflective empiricism. Pure empiricism.)

B. Der Rationalismus. Apriorismus. Ontologismus. Panlogismus. (B. Rationalism. Apriorism. Ontologism. Panlogism.)

C. Der Kritizismus. Negativer Kritizismus oder Skeptizismus. Positiver oder eigentlicher Kritizismus. (C. Criticism. Negative criticism or scepticism. Positive criticism or criticism as such.)

II Die metaphysischen Richtungen. Die drei Hauptrichtungen der Metaphysik. (II. Metaphysical orientations. The three main orientations in metaphysics.)

A. Der Materialismus. Dualistischer Materialismus. Monistischer Materialismus. (A. Materialism. Dualistic materialism. Monistic materialism.)

B. Der Idealismus. Objektiver Idealismus. Subjektiver Idealismus. Transzendentaler Idealismus. (B. Idealism. Objective idealism. Subjective idealism. Transcendental idealism.)

C. Der Realismus. Dualistischer Realismus. Monistischer Realismus. (C. Realism. Dualistic realism. Monistic realism)

III Die ethischen Richtungen. Allgemeine Übersicht der ethischen Richtungen und ihrer Entwicklung. Heteronome Moralsysteme. Transzendente Moralsysteme. Immanente Moralsysteme. (III. Ethical orientations. General overview of the orientations in ethics and their development. A. Heteronomous moral systems. B. Transcendent moral systems. C. Immanent moral systems.)

Einleitung in die Philosophie begins with two complementary definitions: “The purpose of philosophy is to gain a general view of existence and the world, which satisfies the demands of reason and the needs of our minds.” (p. 5). “Philosophy is a general science that has to combine the knowledge provided by the individual sciences into a coherent system and to trace back the general methods and preconditions employed by the sciences to their principles.” (p. 18, see the explanations in the introduction to *System*). Wundt (1920d, p. 256-429) dealt extensively with the history of philosophy before he classified the main orientations of philosophy starting with three basic problems, namely, the problem of knowledge, the metaphysical problem and the ethical problem. The problem of knowledge, which questions the origin, certainty, and limits of knowledge is the precondition for answers to the other questions (p. 257). At first, he defined the epistemological view by distinguishing between several sub-forms, but at the same time he pointed to “intermediate forms,” thus making the distinction between various points of view necessary. Empiricism, rationalism, and criticism are the broader terms for epistemological lines of thought, and materialism, idealism, and realism are the metaphysical lines of thought. The classification of ethical views or “moral systems” follows. This *Einleitung in die Philosophie* is arranged according to systematic aspects, not with respect to the doctrines of individual philosophers. The appendix contains tabular overviews of the history of philosophy and its main schools (1920d, pp. 430-436). Apart from the systematic approach, these thorough differentiations might also be intended to guard against simplistic classifications, including of his own positions. At various points in his work, Wundt tried to explain his epistemological views without using superficial, common labeling. His protest against generalized classifications is most clearly expressed in his letter to Vaihinger (1918, [see above]).

Leibniz is mentioned quite frequently in the introduction, but Wundt mainly portrays the monadology and the notion of a harmonic totality, touching only occasionally on the system of principles. In summary, he characterized – after a comparison to Spinoza’s world view – Leibniz’s system as “... idealistic, individualistic, and monotheistic: idealistic because he regards only those mental qualities as real that are accessible to the immediate inner perception; individualistic by emphasizing the absolute autonomy of individual beings, i.e. monads; theistic, insofar as the highest monad is conceived of as independent as well, thus a being distinguished from the world.” (p. 220). Wundt emphasized the idea of harmony as well as the optimism of Leibniz’s ethics and the “conciliatory” character of Leibniz’s philosophy (p. 219). In a later section, Wundt wrote about “the new concept of soul” and distinguished between Leibniz’s special objective idealism and the peculiar subjective idealism of Berkeley as well as other lines of thought in idealism (pp. 366-369).

Sinnliche und übersinnliche Welt

In the book entitled *Sinnliche und übersinnliche Welt* (On the sensual world and the world beyond), which was written for a wider public, Wundt (1914) described typical world views and discussed philosophical questions. He analyzed the development of thinking from the naïve world view to the sciences and areas of metaphysics and religion. Based on *System der Philosophie*, the book maintains the same basic points of view, but differs in two aspects. First, the separation of scientific and psychological foundations from the philosophical view allows a brighter light to be shed on the historical and critical perspectives of the context of this problem, and more so than a predominantly systematic representation would allow. Second, the changing times in philosophy have “created a considerably altered situation compared to the past.” Even Kant’s epistemology still exerts a strong influence, but diverging approaches can find a more willing ear than before. ... And, also considering the fact that twenty years ago the mere word metaphysics faced mistrust, which is different nowadays. Metaphysics has become evident everywhere, both inside and outside of philosophy (pp. III-IV).

Sinnliche und übersinnliche Welt (1. Aufl. 1914, 423 Seiten). (Sensual and supernatural world.)

- I. Das naive Weltbild. (The naïve world view.)
- II. Das physikalische Weltbild. (The physical world view.)
- III. Die physischen Lebensvorgänge. (Physical life processes.)
- IV. Das psychologische Weltbild. (The psychological world view.)
- V. Sinnenwelt und Ideenwelt. (The world of ideas.)
- VI. Sein und Erscheinung. (Being and appearance.)

- VII. Sein und Bewusstsein. (Being and consciousness.)
- VIII. Wahrheit und Wirklichkeit. (Truth and reality.)
- IX. Die Einheit des Seins. (The unity of being.)
- X. Die sittliche Welt. (The moral world.)
- XI. Das Unendliche. (The infinite.)
- XII. Die Erlösung. (Redemption.)

In this rarely cited book, Wundt describes the world views of physics, biology, and psychology, which developed from the naïve worldview. Philosophical thinking deals with the oppositions between the world of the senses and that of ideas, the world of being and that of appearance, and the world of being and that of consciousness. It also deals with the question of truth and reality. The longest chapter is dedicated to the basic question of the unity of being (pp. 301-369). The moral world is investigated quite briefly, and in the final chapters Wundt outlines the idea of the infinite and the idea of salvation/redemption. *Sinnliche und übersinnliche Welt* summarizes many themes of the *System der Philosophie* and might be somewhat more accessible given the conception of “world views” and the didactic contrasting of metaphysical postulates. On several occasions, Wundt pointed to the fertility and heuristic value of his cognitive principles (e.g. creative synthesis, principle of contrast, etc.).

With respect to the unity of being, probably the most profound question of philosophical thinking, Wundt reviews the dissonances and contradictions that he recognized within the respective philosophies of Fechner, Leibniz, Kant, Herbart, Fichte, Hegel, and Schelling. Every system from this period actually attempted to outline a consistent world view. Within these contexts, Wundt explained the metaphysical and epistemological postulates of his own world view, which included many references to psychology. Thus, he referred to the relativization of the concept of substance in recent physics and argued that “in the two fundamental fields, physics and psychology, the concepts of substance that prevailed in the era of ancient metaphysics have become obsolete.” (p. 328). The reality consists in the actuality of the process. “But where is the unity to be found that brings these two worlds together again, the objective [one] of events external to us and the subjective [one] of becoming and acting within us? The question whether there must be such a unity is regarded as settled, since the abstraction that produced this separation might have been thoroughly necessary, but ultimately it was arbitrary” (p. 331).

On the Emergence of Consciousness

Wundt decidedly contradicted the hypothesis that “consciousness suddenly arises from a permanently recurring miracle of creation at some stage of organic development,” and that it is also “not a general characteristic of matter.” The emergence of consciousness could be interpreted as a general product of natural development. So, from a psychological perspective, it is the first basic psychical synthesis, which makes all further manifestations of the psychological principle of resultants [principle of emergence] actually possible.” (pp. 360-361). He underlined the “continuity of the closing and dissolving of psychical connections, restructuring, and new structuring... This reality is identical to mental activity, and such activity presupposes the kind of continuity for which Leibniz introduced the name of consciousness into psychology.” (pp. 333-334). “Therefore, consciousness, as we saw, is not a particular content of experience added to mental processes, but only consists in the connection of these processes itself. Unconnected psychical elements and sensory qualities that do not constitute any psychical structure are situated outside of consciousness. At the same time, they are the only substrate on which the concept of the unconscious may be applied“ (p. 334). Wundt pondered about what conditions must be assumed for elementary psychical connections, and whether the most basic “movement laws” that have been established in the field of natural research already correspond to subjective qualities. Could it be that even the most elementary organisms are bearers of such “connections of consciousness”? (p. 335). This is followed by a basic explanation of his concept of volitional activity, or to be more specific, of wanting and doing from a metaphysical point of view (cf. Chapter 3. 9. 4 below).

Notions of Infinity and Redemption

In the following chapter, Wundt commenced with physical and philosophical reflections on the notion of the infinite, eventually arriving at an interpretation of the notion of salvation. He considers Buddhism and Christianity to be world religions whose development juxtaposes mythological, symbolic, and philosophical stages, thus allowing a moral ideal to emerge from a religious one (cf. *Ethics*, Chapter 3. 7). “Thus, the idea of the infinite, which is the ultimate root of all religion, but too vague to provide the religious drive with concrete goals in real life, gains its essential completion in the notion of the human redeemer and its continuation in the idea of self-salvation of man through his own deed. The interaction between these ideas leaves none of them unchanged. Even the idea of God is changing from an external power to an inner experience” (1914, p. 423).

Essays and Articles on Topics of Psychology, Epistemology, and Philosophy

Kleine Schriften Band 1. (Minor Writings). (1910, 640 Seiten. Band 2 (1911). 496 Seiten. Band 3 (1921). 549 Seiten.)

Band 1

This volume contains a selection, considered by Wundt to be very important, of “smaller/minor works, which, written at very different times, are destined to provide supplementary explanations of my larger works, especially *Logik*, *Ethik*, and *System der Philosophie*.” They originate mainly from the *Philosophische Studien* between 1885 to 1896. The individual texts were revised before being published.

Über das kosmologische Problem. (On the cosmological problem.)

Kants kosmologische Antinomien und das Problem des Unendlichen. (Kant’s cosmological antinomies and the problem of the infinite.)

Was soll uns Kant nicht sein? (What should Kant not mean to us?)

Zur Geschichte und Theorie der abstrakten Begriffe. (On the history and theory of abstract concepts.)

Über naiven und kritischen Realismus. (About naïve and critical realism.)

Psychologismus und Logizismus. (Psychologism and logicism.)

Band 2

The second volume contains only works from the field of psychology. Published in the *Philosophische Studien* and *Psychologische Studien*, they are “partly additions to the studies contained in the *Grundzüge der physiologischen Psychologie*, partly critical discussions of psychological directions and methods.” These are mainly works that deal with principal questions, about which “even today opinions widely differ” (Preface, 1911, p. III). The treatises are partially reworked and supplemented.

Über psychische Kausalität. (On psychical causality.)

Die Definition der Psychologie. (The definition of psychology.)

Über psychologische Methoden. (On psychological methods.)

Zur Lehre von den Gemütsbewegungen. (About the theory of emotional activation [Gemütsbewegungen].)

Hypnotismus und Suggestion. (Hypnotism and suggestion.)

Band 3

The third volume was compiled and improved by Wundt. It was then edited by his son who wrote that these treatises are “characteristic of the development of his views.” The essays originate from the *Philosophische Studien* except for the article *Logik und Psychologie* (from the *Zeitschrift für pädagogische Psychologie*). The essay *Die Psychologie im Kampf ums Dasein* appeared in 1913 as a separate printing.

Über die Einteilung der Wissenschaften (1889). (On the classification of the sciences.)

Über die mathematische Induktion (1881). (On mathematical induction.)

Die Logik der Chemie (1881). (The logic of chemistry.)

Über die Methode der Minimaländerungen (1881). (On the method of minimal changes.)

Biologische Probleme (1889). (Biological problems.)

Die Empfindung des Lichts und der Farben (1888). (The sensation of light and colors.)

Zur Theorie der räumlichen Gesichtswahrnehmung (1898). (On the theory of spatial visual perception.)

Selbstbeobachtung und innere Wahrnehmung (1888). (Self-observation and inner perception.)

Zur Frage der Lokalisation von Grosshirnfunktionen (1888). (On the question of the localization of cerebral functions.)

Über den Begriff des Gesetzes, mit Rücksicht auf die Frage der Ausnahmslosigkeit der Lautgesetze (1886). (On the concept of the law with regard to the question of the lack of exceptions with phonetic laws.)

Wer ist der Gesetzgeber der Naturgesetze? (1886). (Who is the legislator of the laws of nature?)

Logik und Psychologie (1911). (Logic and psychology.)

Die Psychologie im Kampf ums Dasein (1913). (Psychology and its struggle for existence.)

Note: Many of these texts differ more or less from the original publications, which should be taken into consideration for quotations.

Selection of Topics

Among the almost overwhelming diversity of contents in Wundt’s philosophical writings, three topics have been selected here for discussion: The main influences from the philosophical tradition on Wundt’s work, Wundt’s discussion of ontological ideas, and the metaphysical aspects of the theory of the will, i.e. voluntarism. This includes Wundt’s unusual definition of metaphysics and some other introductory quotations that may assist in characterizing his philosophical position. It is obvious that he attached great importance to reflecting on epistemology and the metaphysical, i.e. the non-empirical presuppositions of psychology. Therefore, the chapter ends with his claim that this connection between psychology and philosophy must be preserved.

3.9.3 Influences from the Philosophical Tradition

Philosophical controversies and influential ideas are more discernible in Wundt's work than in those of other psychologists due to his detailed presentation of them from different angles, which included systematic philosophy, epistemology, logic, ethics, and the history of philosophy. With this abundance of topics, it is important to highlight the main lines of argument. Although a few reviews dealing with Wundt's philosophical work exist, there is a lack of systematic studies with a broader horizon, as can be found in the book by Araujo (2016). The following overview presents the range of issues and influences.

Gottfried Wilhelm Leibniz

With regard to Wundt's psychology and philosophy, the influence of Leibniz must undoubtedly be mentioned first. Since it was not common practice at that time to give precise references and literal quotations, the beginning and progression of the reception of philosophical positions in Wundt's publications cannot be easily dated. It might have been his lectures on philosophy in Leipzig, followed by his academic speech held in 1902 about Leibniz, who was born in Leipzig in 1646, that led to Wundt's profound and intense reading of Leibniz's work, which then culminated in the long essay on Leibniz in 1917. His latent influence also appeared in several references and quotations (1862, 1866, 1874). Until the 1890s, Wundt's writings do not give the impression that his principle of actuality, psychophysical parallelism, and his guiding idea about psychical causality were deduced from Leibniz's epistemology. However, the final passage of the *Grundzüge der physiologischen Psychologie* (1874) indicate that Wundt was guided by a *monistic* world view, which lead beyond Leibniz's views. Wundt combined the biological theory of evolution and the individual's experience of a consistent self-consciousness into a unified metaphysical conception.

"It may be inevitable from this point of view that the genetic conception of psychological facts leads to regarding the human consciousness as product of the development of the course of nature. From the other point of view, the psychological examination surely awakens the conviction that the self-conception of man is the foundation on which all knowledge is based. The immediate result of this self-conception, which is more solid than the certainty of the external world and which we only look at by means of our consciousness, is that we perceive ourselves as a consistent (unified) being. The inner being of our consciousness captures only an infinitely small point of the world. We cannot assume that the world outside of us lacks this inner being. However, if we do think this, then we cannot possibly think about it differently than in the form of our self-conception and the conception of humanity that is built upon it. ... Thus, only a monistic worldview could match the psychological experience that defines individuality without being dissolved into the form of a simple monad emptied of all content, which would take a supernatural miracle to fill with the multiplicity of things. The human soul is not a simple being, but an orderly unity of many elements, and as Leibniz described it: a mirror of the world." (*Grundzüge*, 1874, p. 863).

The lack of a coherent review led to *Gottfried Wilhelm Leibniz's influence on Wilhelm Wundt's psychology, philosophy, and ethics* (Fahrenberg, 2016a, 2017). It is based on quotations from Leibniz, mainly from the *Nouveaux essais* (New treatises, 1701-1704/1765) and the *Monadology* (1714/1720), as well as comments and annotations taken from the *Historisches Wörterbuch der Philosophie* (Historical Dictionary of Philosophy; Ritter et al. 1971-2007). The citations and comments were arranged into 11 topics, and also include sections on Wundt's appreciation and objections vis-à-vis Leibniz's philosophy and theology, the renewed foundation of idealism, moral philosophy and the philosophy of law, striving and imagining in their continuous activity, and the mathematization of the world. The principles proposed by Leibniz are either of epistemological (cf. Chapter 3. 8. 3) or metaphysical significance. At this point it may suffice to outline essential concepts emphasizing Wundt's transformation of Leibniz's thoughts into postulates and principles of his own philosophy and psychology.

In 1916, on the occasion of the bicentenary of Leibniz's death, Leibniz was acknowledged by Wundt as the founder of modern philosophy in Germany. Many years earlier, Wundt had even "borne the bold plan to write a scientific biography of Leibniz," inspired by Leibniz's mathematical-physical work, then by his philosophical ideas. In his essay on Leibniz, Wundt (1917) described in 132 pages how Leibniz replaced scholastic thinking with his own original conception of idealism, namely, that the world and the principles of things in a state of rest and of dynamic change are to be conceived in mathematical terms. The changes abide by the law of continuity, the principle of force, the causal principle, and the theorem of sufficient reason (*nihil est sine ratione sufficiente*). The knowledge of reason ("*Vernunftkenntnis*") reveals the harmony in the coherence of the world, and despite different perspectives, their unity in the multitude (*unitas in multitudine*). In his interpretation of Leibniz's philosophy, Wundt aimed at secularizing it by excluding its theological dimensions where he considered them unnecessary, or he replaced them with philosophical-metaphysical ones. Wundt wrote about Leibniz much more than about any other philosopher, and his fundamental influence on Wundt's program of empirical psychology is evident.

Wundt's *epistemology* was fundamentally influenced by Leibniz as shown in Chapter 3. 8. Also, significant inspiration by Leibniz can be discerned in Wundt's *metaphysics*. Considering the large and difficult range of topics, the following descriptions had to be simplified and confined to a number of important postulates and principles. Four of these principles were already included in his epistemology and methodology, namely, monism, change and development as a guiding principle, dynamism (striving), and perspectivity, unity in the multitude (*unitas in multitudine*).

Law of Continuity

Leibniz repeatedly refers to his law of continuity and the implied concept of infinitesimality as one of his basic concepts. It states that changes, e.g. a movement caused by a push, do not occur in discrete steps, but rather from the perspective of the infinitely small in a continuous transition: “Nothing ever happens in one stroke; and it is one of my greatest and most proven principles that nature never makes leaps. This is what I called the law of continuity“ (*Nouveaux essais*, pp. 330-331). The law of continuity applies generally, i.e. not only in physics, and also for the continuum of sensory impressions, which are only consciously perceived at a sufficient intensity. Thus, this law has important significance for psychology, e.g. when Leibniz described the transition from the unnoticed, or only vaguely conscious, to noticed perceptions and self-consciousness, i.e. the apperceptive process.

The Principle of Harmony and the Unity in the Multitude

The principle of harmony in the order of natural and mental processes as well as unity in the multitude including the related perspectivity form a second central theme. “Souls act in accordance with the laws of final causes (“Zweckursachen) through striving, goals, and means. Bodies act in accordance with the laws of effective causes or movements. The two empires, that of effective causes and that of intentional causes, harmonize with each other.“ (*Monadology*, 79). Harmony means unity in the multitude (*unitas in multitudine*). “The world is not only intentional, but also harmonious because each individual is adapted not only to his or her own destiny, but also to that of all others” (Wundt, 1917, p. 117).

Individuality

The monads (“animated beings”) are “subject to change and are different from each other. The unnoticed perceptions constitute the identical individual, which is characterized by traces or forms of expression that are retained from the previous states of the individual and by which they connect with its present state“ (*Nouveaux essais*, cit. Leinkauf, 1996, p. 329). Perception and apperception allow self-consciousness to emerge as a mental unity.

Striving (appetitus)

The appetitive (striving) capability of the individual and the general process of development correspond to the physical theory of active force (dynamics) and refer to the Aristotelian concept of *entelechy* (self-activity, activity) and the later term *voluntarism*. The new concept of apperception in the psychology of consciousness and the dynamism (self-activity) in this apperceptive process up until integration within self-consciousness and imagining and striving in their continuous activity are fundamental for the forthcoming psychology, and especially for Wundt’s research program in empirical psychology. Wundt renounced the determination of the monads with respect to their substance and separated his system of principles from the theological and metaphysical foundation of monadology.

Apperception and self-consciousness

Leibniz distinguished between the small, often unnoticed perceptions and apperception, i.e. when perceptions become clearly conscious and thus integrated within (self-)consciousness. Starting with voluntary directing of attention, Wundt conceived of a process theory of elementary associative and self-active volitional functions and developed a comprehensive theory of apperception, towards which his multimethod experimental research was predominantly directed.

The theorem of sufficient reason (nihil est sine ratione sufficiente)

Leibniz elaborated the distinction between the principle of causality and the principle of purpose. Wundt interpreted this theorem extensively and explained that physiology could only adapt to the causality of nature, whereas in psychology, which deals with the contents of consciousness and mental and cultural achievements, the principle of cause and that of purpose are to be coordinated, i.e. as a change of perspective on the causal-final axis.

Perspectivity: Unity in multitude (unitas in multitudine)

The term *perspective* was coined by Leibniz and illustrated, for instance, by the example of different views of the same town, each of which depends on the observer’s position. For Wundt, as a neurophysiologist and psychologist, it was a challenge to combine the perspectives of physiology and the psychology of consciousness.

The concept of soul and individuality

Leibniz deepened the theory of categories with his thoughts about substance and actuality as well as emergence and development. From this point of view, individuality could be defined as the special quality of the apperceptive process and memory. Wundt distanced himself from the traditional idea of an immortal soul, which was conceived of as a substance and the bearer of the capacities of the soul, and he demanded that the psychological concept of the soul be confined to its actuality, i.e. to consciousness understood as a process.

Active striving and psychology of the will

An active, dynamic striving that is constitutive of self-consciousness and activities is present in the apperceptive process. Active striving is the guiding principle of Wundt's psychology of apperception and volition. He opposes a one-sided intellectualistic psychology, and decidedly rejects its "mechanics of ideas." He outlined the psychology of the will, which emphasizes "wanting and doing." This voluntaristic tendency characterized his general psychology and metaphysics.

Change and development as a guiding idea

Leibniz had already conceived of the law of continuity as a fundamental postulate in the sense of development, and for him it also included biological development in the animal kingdom. Furthermore, he expanded this idea into a general conception of development, which was also innovative in ethics and the theory of law. He is one of the early protagonists of a developmental history of mankind. The developmental theory of the mind and mental life can be regarded as the guiding idea of Wundt's entire work, including ethics. This is why animal psychology and cultural psychology also belong to his understanding of psychology.

The psychophysical parallelism

Leibniz postulated a parallel connection between body and soul in "prästablierter Harmonie" (pre-established harmony) and explained it as follows: "Souls act by strivings, goals, and means according to the laws of ultimate causes [Zweckursachen]. Bodies act according to the laws of efficient causes [Wirkursachen] or movements. And the two empires, that of effective causes and that of ultimate causes, harmonize with each other." (*Monadology*, 79) Wundt coined the concept of psychophysical parallelism, but considered it only a heuristic principle of research since he viewed all metaphysical "solutions" to the mind-body problem as false. In contrast to Fechner and others, Wundt did not conceive of an identity, but of two fundamentally different reference systems that require independent principles of knowledge and methods. The epistemological assignment of the principle of purpose to the mental aspect (consciousness, cultural development) constitutes the basis of Wundt's theory of epistemology, for purposes are only conceivable as expressions of purposively acting human beings.

Monism

Leibniz countered the Cartesian dualism with an original conception of monism, and with his doctrine of souls (monadology) he distanced himself significantly from Spinoza's understanding of monism. The parallelism of the two synchronous processes and their epistemological distinction, i.e. an epistemological dualism as proposed by Leibniz, define this kind of monism. Wundt affirmed the pursuit of a consistent world view as an essential demand of reason and as a task of philosophy (e.g., 1874, 1917, 1920c). Parallelism and the monistic striving for unity contradict each other. But Wundt apparently follows Leibniz in dissolving this contradiction into two perspectives, in which the unitary psychophysical process is studied according to the natural causality in physiology and according to the psychological causality in psychology, as well as the principle of purpose. Obviously, this is why Wundt rejected parallelism as a metaphysical postulate and just accepted it as a heuristic principle. Two reference systems based on fundamentally different categories serve the complementary, coordinated assessment of psychological and physiological aspects of the unitary process of life.

Kant, Herbart, and Fechner

Apart from Kant, Wundt owed most to the psychological work of Herbart, according to the foreword of *Grundzüge der physiologischen Psychologie* (1874, p. VI). However, further reading shows that Wundt is aligned with only a few basic ideas of Kant, whereas he thoroughly and critically discussed, or resolutely rejected, others. Furthermore, frequent critical comments on Herbart's views give the impression that Wundt is increasingly distancing himself from psychology as a "science of the soul" and from pseudo-mathematical speculation. He was much more influenced by Leibniz's ideas. Occasionally, albeit expressed in a more generalized way, he approved of other philosophers, for example Fichte (Wundt, 1917), who he mentioned, alongside Hegel, even more often than Leibniz in his biographical retrospective (1920). Therefore, Wundt's appreciation must not be understood as if he were aligned with Kant's and Herbart's philosophical positions. In discussing them, he usually concluded with a critical objection. In these controversies he developed his own philosophical positions and empirical psychology.

Kant's critique of knowledge, including his rejection of a metaphysically deduced "rational" psychology, were highly significant for Wundt's philosophical views. Kant's very sceptical assessment of the scientific prospects of this empirical psychology was relevant to Wundt's project of experimental psychology. However, due to the lack of measurement and mathematical construction/formulation, it could not become an exact science (cf. Chapter 3. 8. 6). Kant is quoted in the *System der Philosophie* – mainly in the sections on epistemology – with regard to forms of perception and a-priori statements. Kant's treatment of transcendental problems is subject to critical remarks, and Wundt also contradicts Kant's views on the concept

of purpose with regard to the dispute over causal and teleological worldviews. In moral philosophy, however, Kant's inquiry is appreciated, yet with respect to the idea of God and moral philosophy, Wundt criticized Kant's arguments and the concept of the moral ideal of mankind as being restricted to the ideal of the individual personality. Thus, Wundt is a "Kantian" at most through his critical epistemological attitude and his criticism of rational psychology (in contrast to Wolff and Herbart), because here Wundt adopts Kant's rejection of a metaphysical deduction of empirical psychology. For a nuanced assessment of Kant's influence on Wundt, Wundt's (1892b) detailed essay *Was soll uns Kant nicht sein?* (What Kant should not mean to us?) should be consulted. Wundt dealt extensively with the construction and schematism of Kant's transcendental deductions. Neither in the distinction between the world of values and reality, nor in the contrast between the intelligible and the empirical character is he inclined to see the content of what "Kant can still be/mean to us today." (p. 5). Rather, his relevance primarily consists in two other qualities: "First, the strength of his thinking, which profoundly scrutinizes problems with utmost caution, and then his sublime moral thinking." (p. 5).

Prominent topics in Wundt's reception of Kant include rational versus empirical psychology, transcendental idealism versus critical realism, the relevance of the principle of purpose, i.e. the status and heuristics of teleological explanations, the categorical imperative as a regulative principle versus the idea of humanity and the social commitment of ethics, and finally, the scientific status of psychology.

Also noteworthy are the lacunae in Wundt's reception of Kant. He hardly responded to Kant's concise formulation of fundamental methodological problems in psychology, apart from the controversy about measurement and mathematization. Kant's *Anthropologie in pragmatischer Hinsicht* (Anthropology from a pragmatic point of view, 1798), which could well be regarded as the first textbook on empirical psychology due to its content and sophisticated reflections on methods, was ignored by Wundt as well as by most other psychologists after him.

Johann Friedrich Herbart

Wundt's remarks on Herbart's psychology are critical, sometimes even ironical, especially with respect to the theory of representations, Herbart's pseudo-mathematical conceptualizations, and other "fictions." From Wundt's perspective, Herbart's attempt to reduce the diversity of psychical processes to *representations* ("Vorstellungen") was a mistake. "Thus, in Herbart's understanding, all inner processes dissolve in the mutual relations of representations. What we otherwise believe to do and to suffer ourselves, is, according to Herbart, done and suffered by the representations. The basic fallacy of this psychology lies in its concept of apperception. ... Herbart says himself of his psychology that it constructs the mind from a series of representations, just as physiology constructs the body from fibres. Indeed, just as it is hardly possible to explain physiological functions from the stimulation of nerve fibres, so too is the project to deduce inner experience by the pressing and pushing of representations fruitless" (Wundt, 1874, Chapter 19, pp. 790-791). Wundt then discussed Herbart's speculative equations about intensities and the proportional inhibitions of representations, thresholds, fusion, "mass of representations," and other concepts, including Herbart's dynamic law stating that "the inhibitions to which the representations are exposed in every moment are proportional to the sum of those, which is in direct proportion to the product of the remnants of the fusion, but in inverse proportion to every single representation; these assumptions in themselves could be regarded as more or less plausible hypotheses, if not, as soon as that axiom of the smallest sum of inhibition becomes obsolete, the whole building loses its ground" (according to Herbart, *Psychologie als Wissenschaft*, 1824-1825, §. 36, §. 41-42. (Werke vol. 8.); *Lehrbuch der Psychologie* 1816, Chapter II). Wundt's harshest criticism of Herbart was directed against the metaphysics of the soul on the one hand and against his "mechanics of representations" on the other, because here the psychological significance of volitional activity and of associated feelings are ignored. In volume 10 of the *Völkerpsychologie*, one of his last books, Wundt (1920, pp. 212-213) wrote: "The impoverished system of concepts with regard to psychological capabilities in which, for example, Hegel's 'philosophy of the subjective mind' reproduced the conventional psychological theory of capabilities, or Herbart's forced imitation of classical mechanics by an imaginary mechanics; both ... [refrain] from ... the vivid observation of mental life, which they replace instead with an abstract schematism or a building of arbitrary mathematical fictions.

Wundt often quoted Gustav Theodor Fechner and also maintained friendly relations with his older colleague in Leipzig. Wundt received Fechner's written estate and held a speech on his 80th birthday, as well as his funeral oration. Wundt owed much to Fechner's psychophysics, which he often expressly appreciated, and also to Fechner's views on mind-body identity, although Wundt conceived of two categorically different reference systems.

Other Philosophers

The best systematic impression of Wundt's evaluation of well-known philosophers is provided by his article *Metaphysik in der Systematischen Philosophie* (Metaphysics in systematic philosophy) published in 1907a in a book he edited together with Dilthey, Riehl, Ostwald, Ebbinghaus, Eucken, Paulsen, Münch, and Lipps. Wundt commented on the teachings of a number of modern philosophers, including Leibniz (here only briefly), Kant, Hegel, Herbart, Schopenhauer, E. von Hartmann, and

Nietzsche, as well as on the philosophy of nature by Haeckel, Ostwald, and Mach. In his article, Wundt also referred to the philosophy of nature contributed by his friend, the chemist Ostwald. The concepts of energy and energy conversion proposed by Ostwald are reminiscent of Aristotle's and Leibniz's dynamism, which built a bridge between Aristotle and the more recent energetics, as Leibniz already conceived of the principle of constancy in a form almost equivalent to today's conception. But this would not diminish Ostwald's achievements in the philosophy of nature. "We are all epigones." (1907a, p. 126).

"The philosophers have become very austere in their metaphysical speculations and usually rather cautious as well. But physicists, physiologists, and sociologists incessantly continue to speculate. Thus, the old question of Kant arises from all sides anew: Is metaphysics as a science possible at all?" (p. 132). Wundt's outlook: "... to avoid one-sidedness, to balance the results of the individual fields in a coherent worldview that is adequate to the given state of science – this will henceforth and forever be the ultimate task of science. And even if metaphysics often failed in this task and will fail in it even further, the attempt to solve it must be pursued again and again. The series of attempts to solve this problem will continue to constitute an important part of the history of human thought, in which the intellectual character of the times is perhaps better reflected than in other phenomena." (p. 135).

Araujo (2016) repeatedly pointed to the influences of Fichte and Hegel. However, it is difficult to precisely trace Wundt's lines of reasoning, as he occasionally gave hints, but rarely exact citations, and also because these philosophical discussions refer to a complex network of ideas. To analyze these references more closely is a challenging task, even more so if it is to be carried out from both diachronic and synchronic perspectives, i.e. extended to the differences between Wundt's main works and between their revised editions, in order to trace developments and revisions.

3. 9. 4 Voluntarism: Metaphysical Aspects of the Will

Volitional Activity as a Central Theoretical Construct in Psychology

The empirical psychology of the will was presented in Chapter 3. 5 on General Psychology. Besides apperception, the psychology of volitional processes is the second characteristic trait of Wundt's psychology. Apperception as such is an elementary act of volition and a constituent part of all volitional processes. Wundt described the instinctive, reflexive, and voluntary movements, and emphasized that it is a matter of individual volitional processes, not of an abstract will, as "anytime and anywhere, there is nothing but a concrete wanting (act of volition) ... which is connected to an emotional sequence of events and combined with a more or less distinct process of sensory impressions and representations" (1911, p. 221-222). Wundt wanted to describe the individual processes that we "summarize as will or act of volition" in the way that corresponds to our immediate experience (1911, p. 221). In his general theory of motivation, the three forms, i.e. instinctive, voluntary, and selective actions, constitute developmental stages.

In *Völkerpsychologie* (1908, vol. 8), Wundt first examined the "will as a simple activity" and as a purposive and directed representation; in this respect the will is thus "also an act of logical thinking." Then he contrasted the individual will and the idea of the general will emerging from the connection of many individual wills and as a product of history. In *Ethik* (1886, p. 385) he wrote, "our empirical will is a personal individual will as the unity of self-conscious representing, wanting, and acting." Personality is the "unity of feeling, thinking, and wanting, in which the will appears once more as the bearer of all other elements." Personality refers to a "self-conscious being that is acting with a consistent and selective will," which in the ethical sense includes "the freedom and responsibility of the will." (1919b, 2, p. 201). The volitional activity is of central importance to psychology. Distinguishing between several levels of psychological description and theoretical conception, as well as between metapsychology and philosophical views would facilitate the understanding of Wundt's theory of motivation (cf. Chapter 3. 5. 4).

In postulating instinctive and voluntary activity as the basic function of psychical processes, Wundt is opposed to the widespread view that sensory perception, cognitive representations, and self-consciousness should be given priority. His outline of a general theory of motivation included the biological, evolutionary perspective and the perspective of cultural development as a creative achievement consisting of many volitional activities. Eventually, he developed and expanded this psychology of the will into a metaphysical idea. In *Introduction to philosophy* (1920, p. 416), he mentioned the concept of voluntarism only briefly with reference to Schopenhauer's (1859) metaphysics of the will. Kant described the will as the intelligible ["mental"] essence of man, not subjugated to natural causality. Schopenhauer generalized the concept to a metaphysical concept of the world, with which our ideas and knowledge are confronted ("The world as will and representation"). In his epistemology, Wundt distinguished between voluntarism as an empirical-psychological principle and as a metaphysical view, and he explained individual and the universal voluntarism. He chose Paulsen's term *voluntarism* in order to distance himself from the metaphysical ideas of animism and from similar meanings (1919b, 1, p. 192 and footnote).

The Metaphysical Concept of Will (Wanting and Doing)

According to Wundt, the bearer of the continuous psychological process could neither be the “soul,” nor an “I/self,” nor any other psychological-philosophical structural concept, but rather only a general and variable psychological function due to the postulated process character of the psyche. Its dynamism originated from the basic function of volitional activity. It should be remembered that Wundt assigned the task of gaining a unified worldview through reasonable knowledge to philosophy (metaphysics). Which of the *philosophically* examined *psychological* ideas could lead to this ontological “concept of unity” and could help to interpret this comprehensive conception metaphysically? The final chapter of the first volume of *System der Philosophie* (1, pp. 339-436) is dedicated to this issue. It is a long, highly abstract discourse and difficult due to Wundt’s reasonings and style, with different but partly supplementary perspectives. Since Wundt did not supply a didactic summary of his conclusions and postulates here, a quotation from another book (*Sinnliche und übersinnliche Welt*) is given here. This condensed section on the “metaphysical concept of wanting and doing” may clarify why Wundt associated the will with the concept of unity in psychology and tried to understand the fundamental dynamism of life from a philosophical perspective.

There is only one single psychological process that can be considered a “typical representative of all psychological contents of experience.” This is the volitional process. “What is specific about the will is wanting in that particular sense of the word, which, apart from all the motives, ideas, and feelings accompanying the empirical desires, cannot be absent from volitional processes, i.e. the doing as such, be it expressed by an external action in the objective world or if it remain concealed in the course of mental processes. However, in order to comply with the required concept of unity, we have to conceive of this doing, which is contained in every act of wanting, as being separated from its empirical qualities, from the feelings of activity as well as from preparatory and accompanying conscious processes. For all such phenomena are, in the metaphysical sense, only empirical qualities, or in other words indispensable symptoms of the presupposed, and thus given, content provided in them, which is the pure [act of] doing [as such] ... The volitional process is the typical mental process, precisely because it not only includes all the others in its developed forms, but because it is also the basic, and from our perspective the only safe, objective characteristic of mental life in the world that surrounds us. So, we must not conceive of this doing, which constitutes the ultimate source of life, as a mental content itself, and thus actually not at all as something that could be given to intuition other than through the effects that it produces. As a metaphysical term, it is a postulate which points to everything empirically given in all places, first in our consciousness, but then in the outside world ...” (*Sinnliche und übersinnliche Welt*, 1914, pp. 344-345). In our inner experience, we would associate our activity, i.e. our doing, more directly with our I/self than with our suffering. This activity, considered separately, we call our I/self: “This I/self, considered isolated from the objects that inhibit its activity, is our wanting. Actually, there is neither anything outside man nor within him that he could fully call his own, except for his will.” (*System*, 1897a, p. 377). Wundt calls doing and suffering “complementary concepts” that are inseparably connected as ultimate elements of being (p. 347).

3. 9. 5 Wundt’s Discussion of Psychological and Ontological Ideas

Wundt elaborates on psychological and ontological ideas in the section on transcendent ideas in *System* (vol. 1, pp. 358-436). For several reasons, complex patterns of argument can be found here. The approach consists of partly ontological and partly metaphysical considerations, i.e. a philosophical *description* of the being and a philosophical or theological *explanation* of the being (through God, creation, the immortal soul, the will, etc.). In particular, psychology is grounded in the idea of the individual soul, the idea of the mental community, the idea of humanity, and the supplementation of the moral ideal by the religious idea.

Basic *psychological ideas* exist with regard to the individual soul, the concept of the soul’s substance, and a transcendent concept of an individual soul, as well as to the “pure will as the final point of the individual psychological regressus and the empirical concept of the soul.” The idea of the mental totality, the relationship of will and idea within the idea of a universal unity, the universal ideal of humanity, and its supplementation by the religious idea, are classified in a similar way. The ontological problem consists first of all in the fact that the “original object of the idea” is theoretically separated into object and idea. The additional question as to the relationship between body and mind has inspired, according to Wundt, “the notion of one final epistemic reason of all being for the first time.” (p. 397).

Here, Wundt explained his strategy of *regressus*, i.e. the stepwise reduction, starting from an empirical point and moving to a point of termination, from given states to the conditions that are not given – in this case it means “the will.” In contrast, *progressus* is advancement through the course of development, including the achievements of the voluntary action in a community. The presentation is further complicated by Wundt’s method, which often takes new perspectives, and his habit of reformulating positions he just described. As fruitful as this may be for the discourse, it can become difficult “with regard to the multitude of conflicting and still unsettled opinions” (p. 397) to find access to Wundt’s own positions, which are of interest here.

“Pure will remains the ultimate point of the individual psychological regressus. It cannot be conceived of as a quiet being, but only as a permanent activity. This is why this pure will is not an empirical concept, but an idea related to reason that excludes its realization in any kind of experience, as any activity necessarily presupposes objects to which it can relate. So, the pure will remains a transcendent concept of the soul, which empirical psychology demands as an ultimate unity of mental processes, but which it cannot actually use for its purposes. If this transcendent concept of the soul should be made useful for empirically deducing the facts of inner experience, then it has to immediately expand it to a compound unit, which contains the possibility of multiple acts of representation. This unity of the empirical soul is no longer characterized by an individual activity emptied of content, but by an organization of the mind that is not just analogous to the physical organization of the animated body, but identical to it, as pure mental activity is impossible without the multitude of organs and their functions, and because the organization of living bodies itself presupposes mental life.” (1911, 1, 377-378).

Reflections on volitional activity, the individual soul, and individual unity are bound together in a complex network of philosophical reflections and postulates. The philosophical derivations and versions of the regressus would undoubtedly be important for a reconstruction of the psychological-ontological connections of ideas, but they go far beyond the “concept of unity” of the will. Such ontological and metaphysical convictions (postulates) probably determine other and subordinate philosophical positions, and indirectly the basic preconditions of the individual sciences as well. However, Wundt did not present any direct indications or conclusions regarding typical epistemological-methodological consequences for empirical psychology.

3.9.6 Reception and Comments

There were only few detailed reviews and replies to Wundt’s *System der Philosophie*, including from E. von Hartmann (1890) and J. Volkelt (1891). Some comments revealed a certain surprise that Wundt, known as an experimental psychologist, elaborated a sophisticated system of philosophy, commenting on important transcendent ideas such as soul and God, while including his own interpretation of those ideas. Some of the early biographies (König, 1901; Eisler 1902; Nef, 1923; Petersen, 1925) deal quite extensively with Wundt’s philosophical thinking. Most more recent texts are far too scarce to arrive at an explanation of Wundt’s volitional theory and his metapsychological or ontological ideas. In many cases, either Wundt’s philosophy or psychology is presented, yet without pointing out their connection. Wundt’s metaphysical understanding of the “last questions” was decidedly rejected by several psychologists and philosophers of Christian orientation as a “psychology without soul.” Although he himself did not use this formulation, initially coined by Carl Friedrich Lange (1866), Wundt received much criticism for his so-called “psychology without soul.” (Besser, 1890; Guthberlet, 1898, 1903; Klimke, 1908; Sommer, 1887a, 1887b). Likewise, Wundt’s *Ethik* was rejected by several Christian psychologists because it was not based on an ultimate foundation in God or another absolute entity (for citations and comments, see Fahrenberg, 2011).

The Leipzig philosopher Johannes Volkelt, not to be confused with his son, the psychologist Hans Volkelt, presented the main thoughts of Wundt’s *System der Philosophie*. “There are many objections raised against Wundt’s reasonings. I only want to point out two aspects. First, I consider the main reason he claimed, namely, the will as the only unit of inner experiences, to not be valid. Wundt relied on this unit as ‘one being experienced immediately’” (p. 565). “But what we experience as a unifying bond, as the continuing element in our inner life, that is self-consciousness. ... The second objection is directed against the result as such. Surely, Wundt is on the right track in considering the will as what is real within the I/self. But one must not quit after having presented the pure actuality of wanting as being the most profound condition of all mental processes” (Volkelt, pp. 532-533). The review by the philosopher Eduard von Hartmann (1890) is the most detailed critical examination of Wundt’s philosophical main work, *System der Philosophie*. Hartmann’s philosophical starting point is fundamentally different, as it is determined by his metaphysical assertion of the existence of the “unconscious.” ... “I think that the book is the most important publication on the market of philosophical books since the second, revised edition of Lotze’s *Metaphysik* (1879), and that it therefore merits a more thorough critical examination than many other contemporary publications, even if the result of the critique should turn out to be predominantly negative.” (p. 1). Hartmann sums up his impression as follows: “... it is the ‘conscious matter,’ i.e. a sum of sensitive dynamic elements of matter which he elevates to the principle of the world, while rejecting the ‘unconscious mind’.” (p. 5). At this point, Hartmann points to the beginnings of his own doctrine and its revision, and he tries to explain these general concepts. Hartmann’s differentiated critique draws attention to philosophical problems in Wundt’s system of philosophy, for example: “Here it is clear that it is merely Wundt’s prejudice against the substantial concept of the soul, which leads him to interpret the corrected concept of causality differently in the material and in the mental field, and to exclude the substance as a constant condition from the latter, whereas he encloses it in the former” (p. 30-31).

The philosopher Rudolf Eisler (1902) placed Wundt’s philosophical work at the heart of his monograph: *W. Wundts Philosophie und Psychologie* (W. Wundt’s philosophy and psychology). He wanted to give an overall picture of the work and to eliminate misunderstandings that “largely originate from the inadequate and incomplete knowledge of the theories of the

Leipzig philosopher.“ (p. VI). Eisler emphasized that Wundt achieved real progress compared to any kind of ontologism (quoting from *Logik*, 3rd ed., and *System der Philosophie*, 2nd ed.). “It is a main advantage of Wundt’s philosophy that it neither consciously nor unconsciously begins with metaphysics, but strictly differentiates between empirical-scientific and theoretical-metaphysical perspectives and handles each position at first in its own relative right, in order to finally establish a consistent worldview: “Not to leave the empirical position prematurely, this is the guiding principle of philosophy as Wundt would like to have it, and if one could talk about a Wundtian ‘school,’ then this method of speculation is its hallmark. ... In particular, Wundt always separates the physical-physiological from the purely psychological, and likewise the psychological from the philosophical position (*System*, 2. Aufl., p. X, p. X, 563, 594).” ... “This creates seeming contradictions for those who do not look more closely and who constantly forget that these differences in results stem only from the perspective, not from the laws of reality, and that from the purely empirical position a psychophysical ‘parallelism’ is assumed, whereas in metaphysics, where being is attributed to a reality, an interaction between subject and object can take place. Wundt’s impulse to recognize the different is at least as strong as his striving to unite the opposites” (p. 14).

“In Wundt’s case, a psychologism can only be recognized insofar as, first, the empirical results of the psychological examinations have strongly influenced his philosophical perspectives and, second, the inner experience actually has a certain logical priority to the external experience. ... Reality is nature and mind as one, but the mental side of the world is in an eminent sense the true, real, valuable one. That is why it is a mistake to consider Wundt a representative of a naturalistic psychology. But the fact that Wundt links all natural development to mental principles, and his opinion that nature is the preliminary stage of the mind and that the laws that dominate thinking must be found in nature, bring him much closer to the idealistic directions of previous times than to philosophical naturalism. But what separates him again from the speculation of Hegel or Schopenhauer is the rigorously scientific method, which he adopts from the natural and mental sciences, and not without casting a light on the methods of investigation and the principles of the individual sciences by means of a comprehensive theory of logical methods” (p. 16). It is true, though, that he has increasingly clarified and deepened his position, partly through the progression of his thinking, partly during the polemics with his critics, while having necessarily given up some of his older assumptions. He was not more eclectic than other eminent present or past philosophers, and not so in a worse sense of the word. “The fact that the character of Wundt’s philosophy is a ‘mediating’ one is not to be denied,” but it is not the same whether one mediates, because it is the thoughts that insist, or “whether, the other way round, the mediating arises from the multilateral consideration and knowledge of things” (p. 21). Eisler points to the main points of contact and correspondences in individual opinions, especially to Leibniz and Kant, Fichte, and Schelling, but also to Schopenhauer, Herbart, Lotze, and Fechner.

Wundt opposes intellectualism, because in his view, the driving and effective force is constituted overall by the will. Eisler continued to comment on the controversy with Hegelianism and positivism as the current intellectual tendencies. “Wundt is far from believing in an unshakeable solidity of his doctrine, as, for example, Hegel and others did. But even if there is no trace left of it, the method that Wundt introduced into philosophy will last, as will the idea that only the vivid interaction between philosophy and an individual science is useful for both parts.“ (p. 28). “A certain degree of clumsiness and sobriety in some details is not to be overlooked, although the whole is impressive thanks to its content and form. ... According to Wundt, the absolute reality, the very existence of the world, is the will. But unlike the assumptions made by Schopenhauer and others, it is not a single, simple, universal will, which presents itself as a multitude of individual beings only by its appearance through the ‘principium individuationis’ in space and time. Rather, the world is a totality of real individual volitional units. Yet these are neither isolated absolute substances, but activities, actions, and forces, all in an inner, vivid context and interaction; nor is it an unconscious will without goals and purposes, which at first creates imagination, intellect and reason for itself in a mysterious way, but it is the germ of intelligence contained undifferentiated from the beginning in the will of nature.“ (p. 195). “In the intellectual field, the creative activity of the will is causes unstoppable progress. By putting their power into the service of the overall will to which they unite, the individual wills create a world of intellectual values and goods which in turn empower the individual to greater accomplishments. In contrast to Schopenhauer, Hartmann, and others, Wundt takes a very optimistic worldview, and an affinity with Leibniz (also with Fichte and Hegel) can also be detected here, as Wundt highly regarded the intellect” (pp. 208-209).

In his *Geschichte der Metaphysik* (History of Metaphysics, 1931) the philosopher Max Wundt mentioned his father quite briefly. “Eventually, Wilhelm Wundt, coming from psychological research, established a metaphysics of the will, according to which the foundation of reality lies in the intellectual powers that find their unity in the will. This voluntarism may be reminiscent of Schopenhauer, but Wundt aligns himself at the same time with Leibniz, in that he also conceives the will not as a unity as such but as a specific unique quality of individual beings. The substantial content of reality is a system of volitional monads, in whose interactions ideas come to exist.“ (p. 92).

In his comments on Wundt’s voluntarism, Araujo (2016) noticed that the first edition of the *Grundzüge* (1874) “contained not even a chapter title that contains the term ‘will’. Instead, it is introduced only at the end of the book, in a chapter devoted to the difference between reflex and voluntary movements. ... There is still no talk about the will as a fundamental concept and thus no theory of the will, properly speaking. Nevertheless, Wundt announced here for the first time a central idea of his later theory, namely, that apperception or attention is a manifestation or function of the will. ... However, from the

various presentations of his theory, one can conclude two things: it is one of the three basic functions of consciousness, and it is given as an activity or fact of our immediate experience. ... As Wundt claimed, 'The will is not a property that emerges later in consciousness, but it is originally connected to consciousness. It is obvious that for us there is neither a will without consciousness nor a consciousness without will'. It is clear from this context that Wundt gave the term 'will' a very broad meaning, including in it many processes not usually regarded as voluntary. In general, one can say that the will is the process that gives direction to consciousness, before any action can take place. ... However, Wundt also conceived of the development of the will in a regressive direction. For him, at the same time as the will grows toward increasingly more advanced and complex forms of social life, it also reaches down to the biological organization of living beings. ... First, Wundt decided to use the label 'voluntarism' to characterize his psychological system for two main reasons, namely, to oppose intellectualism and to highlight the importance of feeling and volition in understanding the mind. Second, his defense of voluntarism did not represent a change of mind or a new rupture regarding his psychological thought. Instead, the term 'voluntarism' was only a concise way of emphasizing the main tenets of his psychological theory." (pp. 201-208).

As a summary, and at the same time, a qualification, one can argue that Wundt's guiding principles in psychology and philosophy essentially refer back to Leibniz. Since the influence of Leibniz is dominating, whereas those of Kant and then Herbart are often in second place as a counterpoise, it makes sense to gain a frame of reference through Leibniz's ideas and their reception and modification by Wundt. After this, references to Kant and Herbart are to be classified. Only in the subsequent step, should one have a look at how possible inspirations by philosophers such as Fichte, Hegel, Lotze, and Schelling might fit into these contexts. Wundt occasionally mentioned English and French philosophers and natural scientists as well. However, a valid interpretation of Wundt's epistemological and metaphysical views is not possible without providing the framework of Leibniz's philosophical psychology. Leibniz's law of continuity, his monadology, and his system of principles provide an outstanding example of how metaphysical and epistemological concepts can spread into the scientific landscape in multiple ways.

On Wundt's Voluntarism

With regard to Wundt's claim that theories in empirical psychology should not be deduced from metaphysical positions, it might come as a surprise that he extensively pursued metaphysical discussions, and was thus by no means abstinent in this respect. Starting with his empirical observations on the process of apperception and willing, he developed a general *theory of will* and extended this approach by means of a *philosophical regressus* to a metaphysical *voluntarism*. He relied on certain psychological experiences and insights, which he wanted to combine with his system of psychological principles into a consistent monistic conception. This sophisticated construction is not easy to read, because it demands taking empirical, epistemological, and metaphysical perspectives.

Wundt's outline of voluntarism – beyond the empirical volitional psychology – is determined by the central idea of development. Wundt did not believe in a single creation event, but postulated an ontological continuum, such that the difficult question as to the beginnings of the phenomena of will and consciousness arises. "Where should we begin to interpret the reactions of organisms to external and internal stimuli? Apart from the fact that they have to be included in the causal context of physical life processes, and also as psychical phenomena, as movements associated with feelings, sensations, and volitional acts?" (*Logik*, 1920a p. 619). He did not want to decide on this, but since tropisms are to be observed already with protozoa, he is in favor of a double-sided, thus psychophysical, interpretation (p. 621).

In his remarks on the general laws of life phenomena, Wundt wanted to keep biology away from both animism and vitalism. His voluntarism is defined not by the biological concept of development, but primarily by its generalized version based on the psychological-ontological regressus. The valid endpoint of the ontological regressus is the pure will as the "individual reality of the thinking subject." For metaphysical voluntarism, reality indicates an "infinite totality of individual volitional units" whose interaction constitutes the development principle of the will itself. The world is not a will, but a sequence of volitional units, which are not monads ("substances" separated from each other), but "actuality," i.e. interacting units of will and activity. Wundt turned to the connection of these metaphysically conceived volitional units, and he interpreted the notion of mental totality as a community of wills, as a general will, in which the wanting of individuals and their interaction are enclosed. Would he agree with modern statements about "the selfish gene" as proposed by Richard Dawkins (1976)?

"Voluntarism" was coined in Germany by Paulsen and Tönnies. Wundt, however, conceived of his specific focus of voluntarism by inquiring into the function in psychical processes that most clearly pervades and maintains the *unity* of consciousness, self-consciousness, activities, creative achievements, and cultural development. For him, this is wanting, volitional activity, the will – without being consistent in using these terms. To put it briefly: Wundt interpreted emergent intellectual and cultural accomplishments and biological evolution as a general process of development, but without wanting to adhere to the abstract ideas of entelechy, vitalism, animism, and by no means to Schopenhauer's (1859) metaphysics of the will. He assumed the origin of developmental dynamics in the most elementary, however already psychologically describable, expressions of life, in reflex, and instinctive behavior, and he outlined a continuum of directed attention and apperception, voluntary acts, and ethical decisions.

Wundt's commitment to empirical research and his rejection of a metaphysically deduced psychology appeared in his publications earlier than his elaboration of a voluntaristic worldview. The outline of his theory of apperception preceded his system of philosophy. The sequence of publications and Wundt's biography indicate that his empirical research in Heidelberg commenced many years before articles and books on philosophical topics were published. However, a noticeable interest in epistemological and metaphysical issues is apparent in his early publications (Wundt, 1862, 1863, 1866, 1874). At the latest he commenced with some delay his systematic philosophical studies beyond his early readings during his first years at the university in Leipzig and engaged in academic teaching on philosophy, leading to *Logik* (1880), *System der Philosophie* (1889a) and *Einleitung in die Philosophie* (1901, 1920d).

From Wundt's own comments on his unifying, "monistic" intentions and on the "metaphysical foundations" of empirical psychology, one could conclude that he was very aware of the risk of confounding empirical evidence and metaphysical interpretation. He underlined that the empirical-psychological and the derived metaphysical voluntarism should be kept apart; however, when reading some of his writings, some doubts arise as to the extent to which this is possible and whether he was always successful in doing so: "Since I started in the natural sciences and came to philosophy by working in empirical psychology, it would seem impossible to me to philosophize differently than according to methods that match this order of problems." (1919b, 1, p. IX-X, cf. Chapter 3. 5. 4).

Wundt was a renowned psychologist who attempted to give an explicit account of his epistemological principles as well as a highly differentiated exposition of his philosophical (metaphysical) standpoints and specific postulates. As a consequence, he received some positive comments, but also many objections and fundamental disagreements. His openness to state and clarify his philosophical presuppositions did not become a role model in psychology. Within the mainstream of psychology there is an obvious reluctance to continuous critical reflection and open discussion of fundamental presuppositions as an essential part of a profound *theoretical psychology*. Wundt's urgent plea to keep the relationship between psychology and philosophy alive in order to enable collaborative and critical reflection of philosophical presuppositions in empirical research had little impact. It appears that individual "metapsychology" is kept as a kind of private affair in most instances, even in autobiographies.

Metaphysics and Psychology

In the first place, the question was whether or not Wundt's psychology could be understood at all without the knowledge of his epistemology and philosophy (metaphysics). In both respects, this fundamental question must be answered in the negative. Wundt's philosophical presuppositions, evident in his empirical psychology, are:

- *monism* conceived of as an integral way of viewing the psycho-physical unity of life and integration of essential perspectives (epistemological-perspectivistic monism);
- the *ontological continuum* of biological and psychical evolution without a specific act of *creating* human beings;
- the *renunciation of metaphysical-theological ideas* about a substantial (immortal) soul and about the idea of a personal God as the "reason of the world" and the ultimate transcendent foundation in ethics;
- *volitional activity* as a fundamental dynamic in biological evolution and mental development (in the individual and the community) as opposed to intellectualism (i.e. overstating thinking, self-consciousness, and cognitivism).

Wundt's epistemology and the derived system of principles are certainly linked to such postulates. He insisted, however, that his empirical research in psychology was not deduced from such presuppositions and actually did commence and proceed on empirical grounds. The philosophical reflection did not lead the way, but was stimulated by the ongoing research and academic teaching and then co-developed to build up a contingent whole.

Separation of psychology and philosophy

The history of the *separation of psychology and philosophy* is an important topic in the historiography of psychology in Germany ("Trennungsgeschichte", see Fahrenberg, 2011, 2015; Pongratz, 1984; Schmidt, 1995). Wundt considers the connection between empirical psychology and philosophy indispensable since a lack of reflection on philosophical preconditions results in biases based on personal metaphysics.

In the same year that Wundt wrote *Die Psychologie im Kampf ums Dasein* (*Psychology in the Struggle for Existence*) expressing his concern about the fate of psychology and the separation of disciplines, Heinrich Rickert (1913) issued the *Erklärung von Dozenten der Philosophie in Deutschland gegen die Besetzung Philosophischer Lehrstühle mit Vertretern der experimentellen Psychologie* (Declaration of lecturers of philosophy in Germany against the occupation of philosophical chairs with representatives of experimental psychology) in Freiburg and received 106 signatures from professors and lecturers of philosophy, many of whom also held dual appointments in psychology. In *Die Psychologie im Kampf ums Dasein* (*Psychology in the Struggle for Existence*) Wundt wrote: "Those important more general questions, which are therefore

essential for psychological education, are so intimately connected to epistemological and metaphysical points of view that it is impossible to see how they might ever disappear from psychology. This clearly shows that psychology should be considered a philosophical discipline as well. ... Thus no one would suffer more greatly from such a separation than psychologists and hence also psychology. What some philosophers today erroneously object to, namely that it is more of a technical discipline than a purely scientific discipline, could become a reality to a frightening degree." (1913a, p. 24). "In psychology, a purely practical discipline would be promoted by nothing more" than by its separation from philosophy." (p. 37).

4 Reception

4.1 Strategies for Reception Research

Since the mid-1870s, Leipzig has been a world-famous address for new psychology. However, Wundt is rarely mentioned today. Apart from his status as the founder of the first psychological laboratory, and thus also as the founder of psychology as a discipline at universities, his influence has clearly declined after the turn of the century, which was still during his lifetime. Wundt has practically turned from a founding father into an outsider. This development has been variously interpreted. Since there are few concrete clues in the historiography of psychology, a reception analysis has been undertaken. Is there a continuous tradition or evidence of a break of tradition?

The absence of Wundt at the founding congress of the *Gesellschaft für Experimentelle Psychologie* in 1904 was already mentioned in the introductory chapter. However, Georg Elias Müller, the chairman at the time, wrote a letter of condolence in 1920 – also on behalf of the Society – to Wundt’s son Max paying tribute to Wundt as “the main founder of psychology.” In the estate there are letters of condolence from all over the world. Much later, the symposia of the XXII. International Congress of Psychology in Leipzig in 1980, the centenary of the founding of the institute in 1879, attracted international participation, and inspired a considerable number of publications on Wundt in East and West Germany afterwards, as well as in several European countries and the US. Since then, however, there have been comparatively few additional activities.

As with the anniversaries of Immanuel Kant [2004], Sigmund Freud [2006], Franz Brentano [2017], and Karl Marx [2018], stronger interest in Wundt’s legacy is expected during the centenary of his death in 2020. The question is whether or not this commemoration will be restricted to the history of psychology, or if central concepts of his entire work will be reconstructed and worked out in the full scope of their significance? What effect did Wundt’s work have during its time and what were its implications in the following generations? Are there certain guiding principles and theoretical concepts that are still relevant today? What can be said about the impact of his ideas outside the German and English-speaking world? Most of his foreign doctoral students did not come from the United States, but rather from other, mainly Eastern European, countries. The reception research could more thoroughly address essential perspectives of the history of ideas: What influence did Leibniz, Kant, Fichte, Herbart, Fechner, Bain, Darwin, Spencer, and others, have on Wundt’s work? Since Wundt had an exceptionally large circle of doctoral students and staff, the question arises as to whether he had “disciples” in the close sense, i.e. associates who discussed and integrated some of his central concepts into their own work or developed Wundt’s theories, concepts, and methods even further.

In the long term, it is possible that Wundt’s contributions experience the same fate as that of other psychologists of his time and are largely forgotten. Except in a particular historical context, who quotes Wundt today, or for that matter, Külpe, Meumann, Krueger, Kirschmann, Messer, Wirth, Ebbinghaus, G. E. Müller, Stumpf, Ziehen, and many others who were then well-known psychologists? In academic psychology, which is so uncertain in its theoretical and philosophical foundations, isn’t there generally this kind of process of de-actualization, not of complete forgetting, but of reduction to a predominantly historical event? Aren’t there counterexamples, such as Hugo Münsterberg, William Stern, Wolfgang Köhler, and Kurt Lewin? Aren’t there also several obvious general trends in the dynamics of interest, such as a growing ignorance of epistemological and philosophical presuppositions of empirical psychology and the temporary preference for highly specific research orientations in psychology instead of attempts at theoretical integration?

Reception research begins with the analysis of reviews and various sources (secondary literature), including psychology textbooks on general psychology as well as the history of psychology. However, this procedure is inadequate. If one wants to examine the reception history of Wundt’s psychology, one first has to establish and define the guiding principles of his intellectual work, an endeavor that will lead to the conclusion that Wundt’s psychology is closely intertwined with his philosophy, especially his epistemology. In the reception of Wundt’s writings by psychologists, the epistemological foundation was usually excluded and, thus brought about a source of various misunderstandings. Because his philosophical work has often been overlooked, so has his work pertaining to epistemology, system of categories, and methodology.

Reception research on Wundt is difficult for several reasons. At that time, there was no comprehensive documentation in the sense of today’s databases, and citation statistics are not available. In Wundt’s time, references and quotations were usually cited less accurately than today, and often only by the author’s name. However, the greatest difficulty of reception research is the scope of the work, the number of books and pages and, even more, the multitude of domains and issues. The most important way to access the reception of Wundt’s work remains to examine and interpret the secondary literature. In addition, bibliometric methods can be used. Besides findings based on conventional methods, e.g. “(Wilhelm) Wundt” in the title and in the keywords of publications in the PsycINFO, PubPsych, PSYINDEX, and Medline databases, statistics about the

appearance of “Wundt” (Google Ngrams) in books since 1850 are also reported here. Surveys on Wundt’s historical and contemporary eminence are briefly presented, and the critical question is addressed regarding the available knowledge of Wundt’s work and legacy that has led contemporary American psychologists to publish “rankings of eminence.”

4. 2 Reception Analyses

4. 2. 1 Systematic Reception Analysis

The author’s studies have already been published in detail (open access) and are easily accessible on PsyDok (Fahrenberg, 2011, 2015a, 2018a):

(1) The reception analysis was based on a summary of Wundt’s psychology and philosophy condensed to a number of topics and propositions. The unavoidable reduction led to about 50 topics, which are supplemented by detailed quotations and comments (2011, pp. 17-103). There are five subject areas: Psychology is an independent discipline; The tasks and contents of psychology need to be redefined; Psychology has different methods; Psychology depends on philosophical-epistemological presuppositions (theory of science), and there are philosophical-anthropological perspectives. The investigation is based on journals, books, and other sources and the method is described in detail (pp. 205-210). The search for reviews of important publications by Wundt was limited to the notable German-language journals of psychology and philosophy. The direct screening of these journals and their index volumes was supplemented by online research in the *Periodicals Index Online PIO* and *Periodicals Archive Online PAO* databases. The following sources were evaluated:

approximately 75 contemporary reviews of Wundt’s psychological and philosophical publications in journals since 1858, covering at least one printed page;

approximately 20 other treatises and commentaries;

approximately 50 contributions to theoretical controversies (about 20 contributions by Wundt);

approximately 50 older and newer textbooks on general psychology, theory of science, and the history of psychology from 1883 to 2010.

In addition, other sources were analyzed, including biographies, speeches and letters, a “Festschrift,” remembrances and obituaries, occurrences of Wundt in the self-portrayals of German psychologists, congressional reports, and encyclopedias. The reception research also includes bibliometric studies about the frequency of citations in databases and the internet (e.g. Google Ngrams with the search term “Wilhelm Wundt” or “Wundt”), comparative assessments, and rankings of eminence (excellence). The material containing detailed quotations and commentaries is documented on roughly 400 pages (pp. 231-633), including the stimulating scientific controversies in which Wundt had triggered or was involved (pp. 371-426) and the bibliometric analyses (pp. 503-513). Based on this multimethod reception analysis, a number of hypotheses was derived as to how the distancing from Wundt and his work occurred. These hypotheses suggest possible motives contained in his scientific work, didactics, and personality (pp. 143-165).

(2) The book on *Theoretical Psychology* (2015a) provides a brief summary on the reception of Wundt’s psychology with notes on key intellectual controversies between Wundt and Brentano and Wundt and Freud (pp. 259-263, pp. 308-325), reflections on multimethod reception research (pp. 593-686), including on Wilhelm Wundt (pp. 621-624), preliminary bibliometric studies of dynamics of interest and scientific trends, e.g. in the topics of scientific journals (pp. 629-642). Later, a more profound analysis of Wundt’s work resulted in additional topics and issues, including the influence of Leibniz’s philosophy and psychology, the development of neuropsychology, and additional aspects related to cultural psychology (Fahrenberg, 2015a, 2016a, 2016b).

(3) The expanded German version of the present book (2018) contains additional sources and summaries. It deals with the work as a whole and discusses the philosophical tradition of Wundt’s ideas and the reformulation of some of the hypotheses concerning the “break of tradition” (pp. 318-342).

4. 2. 2 Contemporary Reception of the Complete Work and Initial Biographies

The immediate impact of Wundt’s publications might best be seen in the contemporary reviews of his books and journal articles. However, the reviews deviate in length and thoroughness, with varying amounts of interest in the individual books or revised editions. Some reviews were clearly influenced by the reviewer’s epistemological and philosophical attitudes, and partly also by their religious beliefs. These limitations also apply to the often very short and highly selective descriptions of Wundt’s psychology in contemporary textbooks, which means that such presentations require critical analysis, and also occasionally questioning of the author’s competence.

The research also led to the biographies on Wundt (cf. Chapter 2) and the various overviews of his work. The early portrayals by Eisler (1902) and Oesterreich (1923/1951) have a relatively wide scope, such that longer quotations were

included in the aforementioned documentation. The entry written by Eleonore Wundt (1928) about her father in the *Biographisches Jahrbuch* contains, despite its relative brevity, essential topics as well as the context of the entire work, and thus far surpasses contributions from Wundt's "students" and most of the later attempts thanks to its advanced understanding. In general, there are not many later presentations that reach or exceed these early tributes.

The philosopher Rudolf Eisler, who later compiled a well-known *Handwörterbuch der Philosophie*, evaluated Wundt's approach: "It is a major advantage of Wundt's philosophy that it does not consciously or unconsciously place metaphysics at the beginning, but strictly differentiates between the empirical-scientific and the epistemic-metaphysical approach, and each perspective is arrived at on its own terms with respect to its relative justification, leading finally to the establishing of a uniform view of the world. Wundt always separates the physical-physiological from the purely psychological, and also the psychological from the philosophical. This creates seeming 'contradictions' for those who do not look more closely and who forget that differences in results are due to differences in the way of looking at things, not in the laws of reality ... " (p. 14). Traugott Oesterreich (1923/1951, pp. 343-360) wrote the chapter on Wundt in the, at that time, standard German encyclopedia of philosophy, i.e. *Überwegs Grundriss der Geschichte der Philosophie*. He focused on the most important philosophical views. The contents of *Völkerpsychologie* are presented in a clear way, while the concepts and methods of empirical psychology are hardly explained. Nevertheless, thanks to its theoretical horizon and consideration of the arguments, this masterly written outline of Wundt's work surpassed the usually much narrower Wundt reception within psychology, e.g. that of specialized psychologists, who excluded many of the essential issues and important context from the beginning. However, Oesterreich criticized logical imprecision, even contradictions in conceptualization (without noticing Wundt's perspectivism and complementarity) and wrote: "Because of this lack of logical acuity, he cannot be described as the 'Leibniz of our days.' Only in terms of the extent of interests and knowledge can he be compared to Leibniz" (p. 347). Perhaps this accentuation is a reaction to the appreciation expressed by Eisler (1902, p. 21): "Wundt shares essential communalities with Leibniz. He can virtually be called the Leibniz of the 19th century ... "

4. 2. 3 Bibliometric Analyses

In order to assess the general impact, statistical information is needed. During Wundt's time, the frequency of citations was not statistically recorded. Thus, only the frequency of the presence of his name in databases such as PsycINFO, PubPsych, or PSYINDEX can be examined. Table 1 provides a summary of references to (1) Wilhelm Wundt as author and (2) Wilhelm Wundt (all text fields) (Abstracts). Of course, such indices cannot indicate whether the work in question was positively or negatively assessed in terms of content. What do these frequencies really say about the originality and relevance of Wundt? Does this data suggest that in the decades before the turn of the century Wundt was internationally one of the most renowned German scholars, that the Leipzig laboratory was world famous, that he had an impressive number of scientifically outstanding doctoral students, that he was an *honorary member* of 12 international scientific societies, or that he is part of the "academic pedigree" of more than half of the American psychologists of the first and second generation (Ben-David and Collins, 1966). Presence in Google Books (Google Ngrams 2010)

Google allows the compilation of web statistics about the occurrence of a name in a certain period of time and in a certain language in the books (Google Books) available on the internet (<https://books.google.com/ngrams>). Michel et al. (2011) explain their Quantitative Analysis of Culture Using Millions of Digitized Books, but only make some general remarks about the basis of the data. From the corpus of over 15 million digitized books (about 12% of all published books), 5.2 million books were selected "on the basis of the quality of their OCR band metadata. ... Periodicals were excluded" (p. 176). Most of the books came from more than 40 university libraries around the world, and other books were provided by publishers. The metadata describe the location and year of publication. The resulting corpus contains over 500 billion words in English and 37 billion in German, etc. "Usage frequency is computed by dividing the number of instances of the n-grams in a given year by the total number of words in the corpus in that year." (S. 176). For criticism, see also

https://en.wikipedia.org/wiki/Google_Ngram_Viewer.

This system also provides diagrams of the results, which are very much in need of interpretation. However, the "hits" can be visited directly. Instead of "Wundt," it is also possible to enter "Wilhelm Wundt" (as a bigram) in order to exclude the works of his son, Max Wundt, and others with the same last name. However, the references to Wilhelm Wundt without his first name are then also lost. Since roughly 1908, Wilhelm Maximilian Wundt and Max Wundt are increasingly confused, as can be inferred from the corresponding analyses with PIO and PAO for the reviews. The X-axis of the illustration provides the years (or decades) of the chosen period (1850 to 2010) and the Y-axis provides fractions of percentages (graphically relativized depending on the scale of the Y-axis), e.g. relative frequency of the "Wilhelm Wundt" bigram among the millions of words in the books of the relevant period (Figure 3).

Table 1: Presence of Wundt in PubPsych and PsycINFO as author, in the title, or overall.

	PubPsych		PsycINFO			
			LA=EN		LA=all	
	Wundt	Wundt (Title)	AU=Wilhelm Wundt*	Wundt=All text fields	Wundt=All text fields	Wundt=(Title)
until 1920	–	–	135	353	355	23
1921-1950	–	–	2	145	247	36
1951-1980	89	55	1	133	172	50
1981-2010	355	107	4	316	390	95
2011-2017	84	22	1	117	128	16
Total	528	184	143	1.064	1.292	220

Note: The reprints of Wundt’s works after 1920 have also been recorded. In the field of philosophical literature, Wilhelm Maximilian Wundt and his son, the philosopher Max Wundt, are increasingly confused after 1920.

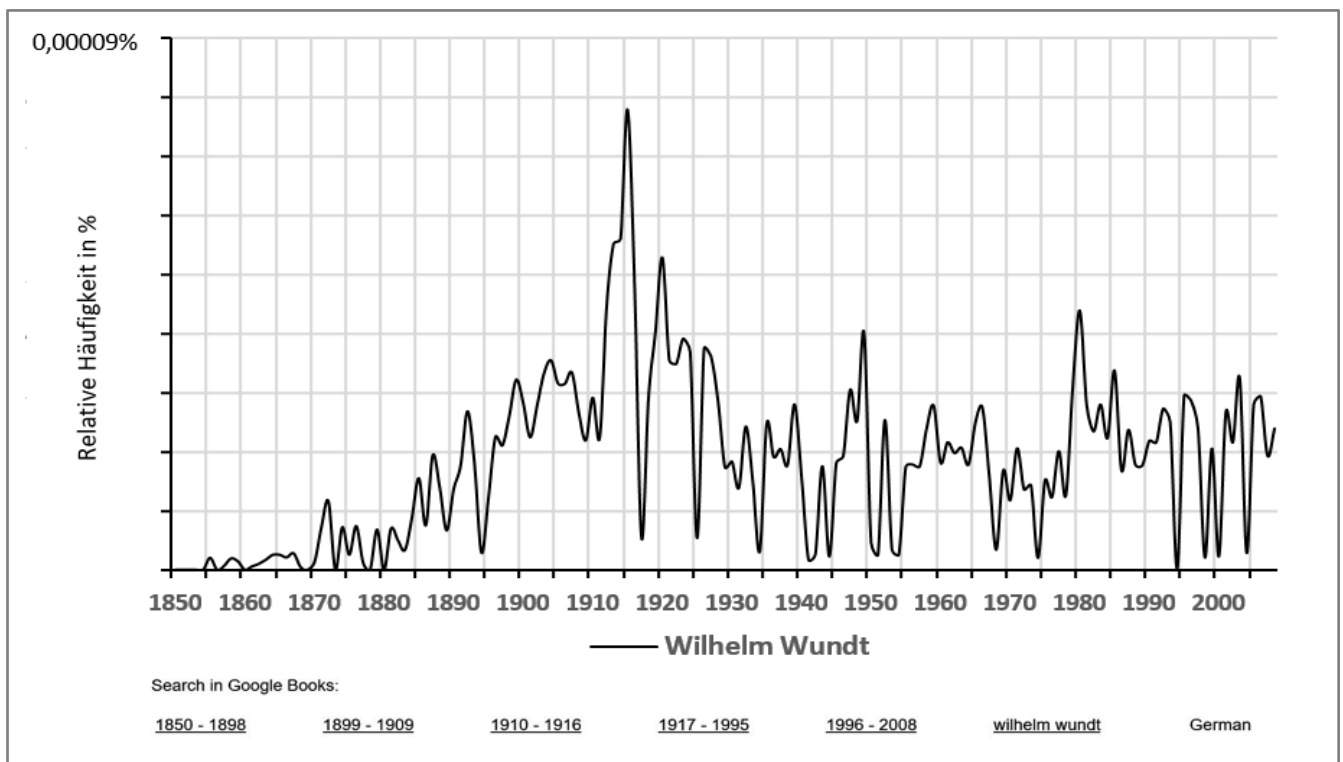


Figure 3: Occurrences of Wilhelm Wundt in German sources. Percentage frequency of the bigram “Wilhelm Wundt” based on all words of the partial corpus of German sources in the respective period (smoothing 0). Links to the websites with the hits, i.e. the titles and digital copies of the books, from the website depicting the Ngrams graphics are provided.

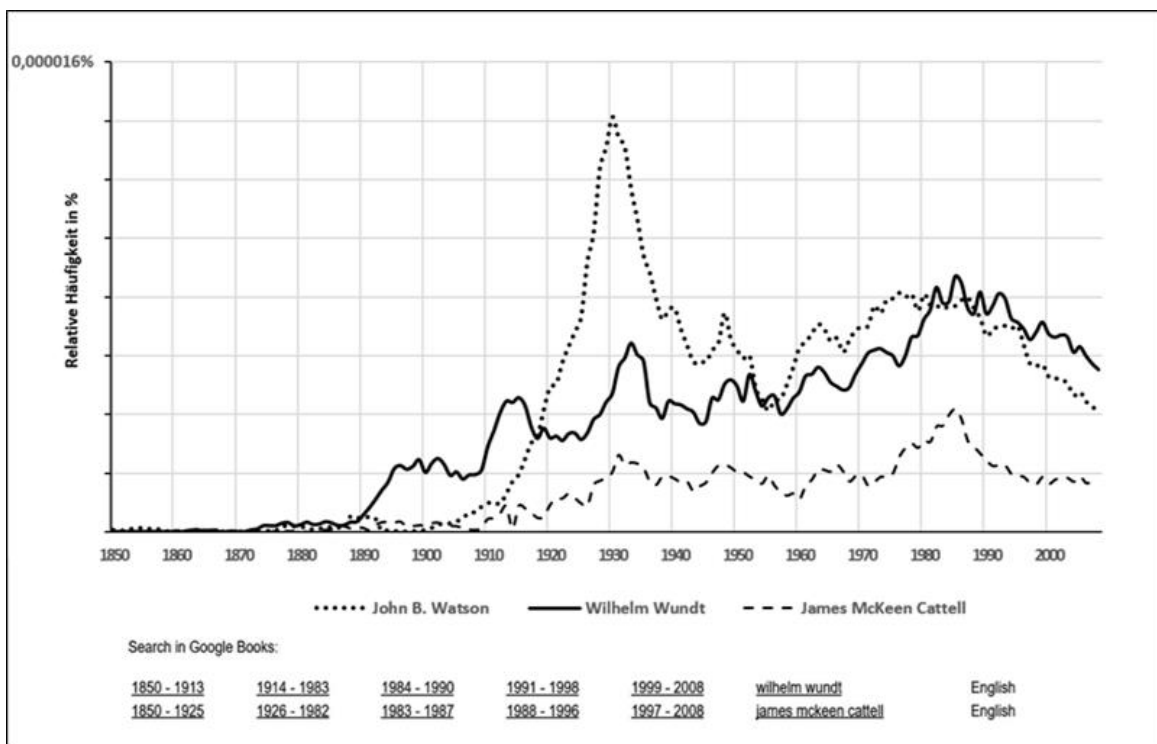
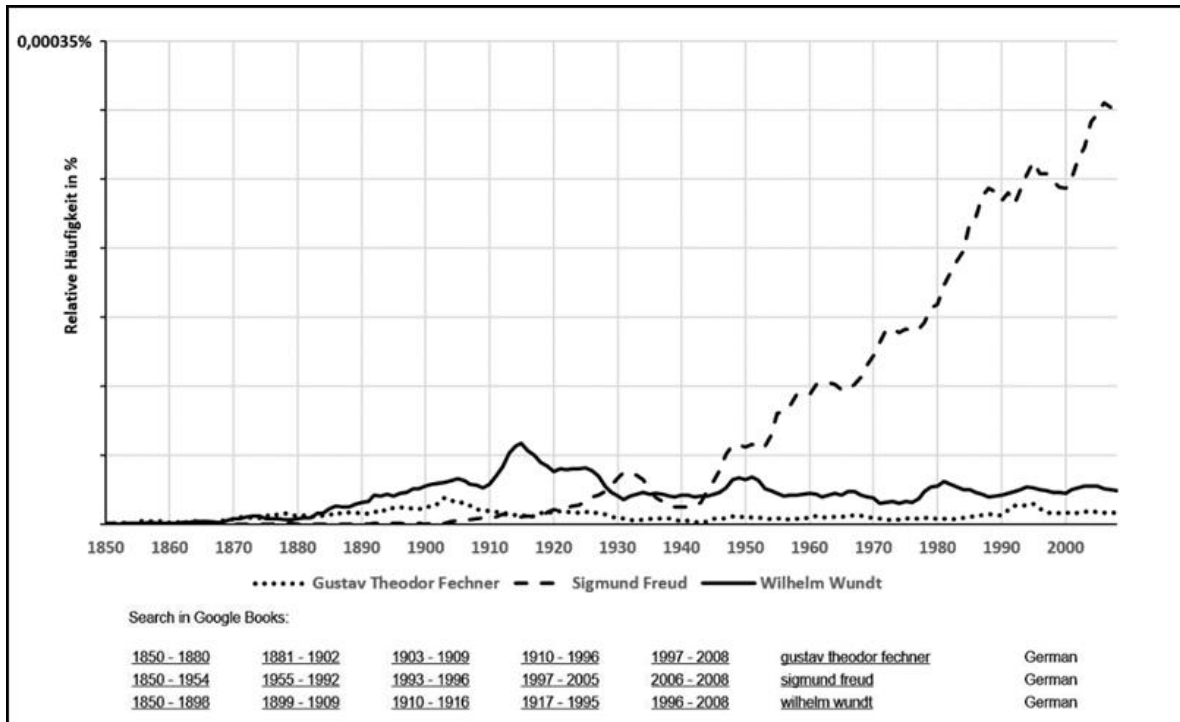


Figure 4: Occurrences of Gustav Theodor Fechner, Sigmund Freud, and Wilhelm Wundt in German sources and of James McKeen Cattell, John Boardus Watson, and Wilhelm Wundt in English sources (percentage frequencies of bigrams, smoothing 2). Because of the frequency of the name “Watson,” this data is particularly uncertain in the English-language sources.

Since the individual “hits” come from a wide variety of publications, it makes sense not to look at the numerical differences, but rather at the time span. Questions arise as to the relative peaks (main works? anniversaries? individual publications?). For Wundt there is a peak around 1915, then a pronounced decline, followed by a relatively constant level starting around 1930. There are some minor peaks around 1874, 1920, and 1950, and beginning around 1979/1980 there is again a slight increase. The diagram shows a permanent, yet wave-like occurrence of the name Wilhelm Wundt in the German database.

Similar, but of course much less pronounced, is the occurrence in other languages, i.e. English, French, Spanish, etc., in the database. In the Chinese sources, the impact only becomes apparent in more recent years. In the German-language sources, occurrences were also analyzed for Franz Brentano, Karl Bühler, Wilhelm Dilthey, Hermann Ebbinghaus, Gustav Theodor Fechner, Sigmund Freud, Oswald Külpe, Felix Krueger, Ernst Meumann, Georg Elias Müller, Hugo Münsterberg, Eduard Spranger, William Stern, and William James, and also Immanuel Kant and Charles Darwin for the sake of comparison (cf. Fahrenberg, 2011, pp. 500–505, with 21 graphs).

The occurrence of Wundt’s collaborators is minimal, and that of the other psychologists selected declines even more sharply. For Münsterberg, following a peak prior to 1920, occurrences remain relatively constant, and for William James, it is likewise relatively constant, also in the German-language books, perhaps because of his pedagogical and philosophical works. The low occurrence of Gustav Theodor Fechner and Wilhelm Wundt in contrast to that of Sigmund Freud, and also the comparison of the trends for James McKeen Cattell, John Boardus Watson, and Wilhelm Wundt in the English-language Google Books (Figure 4), and Wundt, Freud and James (Figure 5), invite interpretation.

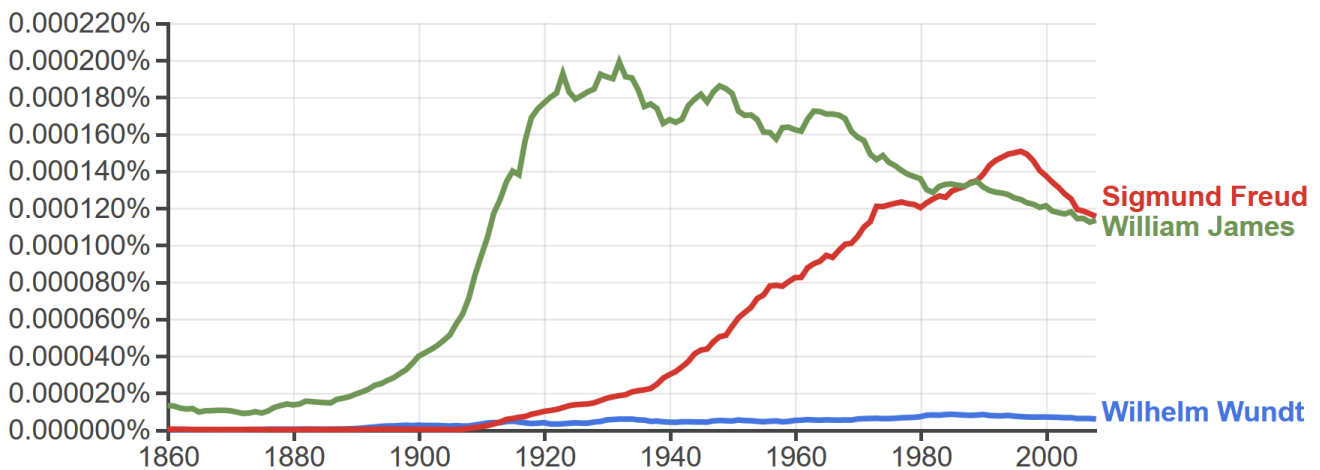


Figure 5: Occurrences of Wilhelm Wundt, Sigmund Freud, and William James. English sources 1860 – 2008. Percentage frequency of the bigrams (smoothing 3).

Presence in the *Historisches Wörterbuch der Philosophie*

The presence of Wundt was assessed in the CD version of the *Historisches Wörterbuch der Philosophie* (ed. Ritter et al., 12 volumes, 1971–2007). Surprisingly, there were 773 hits for “Wundt,” and 490 hits “W. Wundt,” an outcome that does not correspond to the very limited interest about Wundt within the discipline of psychology, or his limited presence in related textbooks and handbooks.

Table 2: Frequency of hits in the Historical Dictionary of Philosophy (ed. J. Ritter et al., 1971–2007)

Author	Frequency	Author	Frequency	Author	Frequency
Kant	> 5.000	F. Brentano	230	Ebbinghaus	97
Leibniz	3.278	James	332	Külpe	95
Wolff	1.610	(W. James)	193	Stern	89
(Chr. Wolff)	463	Windelband	294	(W. Stern)	25
Freud	1.231	Fechner	275	Kraepelin	73
(S. Freud)	497	Spranger	188	(E. Kraepelin)	40
Dilthey	1.090	E. v. Hartmann	172	Münsterberg	71
Wundt	773	Lewin	133	Stumpf	55
(W. Wundt)	490	Krueger	118	G. E. Müller	46
N. Hartmann	502	Köhler	108	Hellpach	39
Herbart	466	Th. Ziehen	105	Meumann	25
Lotze	456	K. Bühler	99	Wirth	16

Note: The frequency statistics contain serious uncertainties since names are cited in the articles only partly with initials. Thus, without substantive controls, these statistics are not reliable.

Rankings of Scientific Importance (Rankings of Eminence)

Boring's (1950) frequently quoted book containing his strange assessments of trends in psychology and his debatable understanding of psychology demonstrates how subjective and questionable reviews can be, even those from a well-known psychology historian. He cites three books as the most important "landmarks" of psychology: Fechner's *Elements of Psychophysics* (1860), Ebbinghaus's *On Memory* (1885), and Freud's *Interpretation of Dreams* (1900), and also highlights four "very great men in psychology's history," namely, Darwin, Helmholtz, James, and Freud (p. 743). The well-founded skepticism about historiography by individual authors may have helped to encourage more representative assessments through a broader sample of psychologists and to ask for a ranking of "eminence" of outstanding psychologists. There is no doubt that the results will depend to a large extent on the sample of persons interviewed, their expertise and judgement, the sampling strategy, the response rate and, in particular, the wording of the questions. A particular problem is the highly questionable knowledge of the participants, especially if American psychologists are asked about German psychologists.

A survey of well-known psychologists received only 246 responses in a random sample of 1,000 members of the *American Psychological Association* (Wright, 1970). Freud, Skinner, Watson, Pavlov, and Hull were recognized as exerting the greatest influence on 20th century psychology. Skinner, Rogers, Hebb, Piaget, and Harlow were judged to be the five most influential contemporary psychologists. Such ratings reflect attitudes and preferences that could quickly become outdated due to the pace of scientific development. These rankings reflect the American scene before the decline of behaviorism, the cognitive turn and cognitive science, and also before the expansion of clinical psychology and, of course, the "Decade of the Brain." A later study in 1990/91 was carried out in a similar way. Two samples were interviewed: American experts in the history of psychology and department chairpersons. The questions referred to: (1) the *general* importance of authors, and (2) their current importance. Rankings were calculated from the number of nominations. Table 3 summarizes the results of the "general importance" (Korn, Davis and Davis, 1991). Historians of psychology ranked Wundt, James, and Freud as most important, while the chairpersons preferred Skinner, Freud, James, Piaget, Hall, and then Wundt, who was ranked sixth.

Table 3: Ranking of eminent psychologists (Korn et al., *American Psychologist*, 1991, 46, p. 790).

Historians of Psychology			Chairpersons Psychology		
Rank	Name	Nominations	Rank	Name	Nominations
General Importance					
1	Wundt, W.	189	1	Skinner, B. F.	508
2	James, W.	167	2	Freud, S.	459
3	Freud, S.	156	3	James, W.	372
4	Watson, J.	108	4	Piaget, J.	237
5	Pavlov, I.	79	5	Hall, G. S.	216
6	Ebbinghaus, H.	69	6	Wundt, W.	203
7	Piaget, J.	51	7	Rogers, C.	192
8	Skinner, B. F.	46	8	Watson, J.	188
9	Binet, A.	46	9	Pavlov, I.	152
10	Fechner, G.	46	10	Thorndike, E. L.	124
Current Importance					
1	Skinner, B. F.	159	1	Skinner, B. F.	526
2	Miller, G. A.	56	2	Bandura, A.	285
3	Simon, H. A.	53	3	Miller, N.	229
4	Miller, N.	51	4	Miller, G. A.	97
5	Hilgard, E. R.	48	5	Neisser, U.	86
6	Sperry, R.	44	6	Bower, G.	85
7	Bandura, A.	41	7	Estes, W.	80
8	Eysenck, H. J.	37	8	Seligman, M.	75
9	Piaget, J.	36	9	Eysenck, H. J.	69
10	Neisser, U.	32	10	Hilgard, E. R. & Rescorla, R.	66

Notes: From the 99 historians of psychology surveyed, 29 rankings were received regarding general importance, and 23 regarding current importance. The rankings, which were obtained by 93 chairpersons, are from the unpublished survey in 1990 by Estes, et al. A total of 107 (226) names of important psychologists were nominated respectively.

A ranking “The 100 most eminent psychologists of the 20th century” provided by Haggblom et al. (2002) ranked psychologists in the following order: Skinner, Piaget, Freud, Watson, Bandura, James, Pavlov, Lewin, Rogers, Thorndike, and, followed by Wundt at number 51. The evaluation is probably even less meaningful because of various flaws. The ranking is based on three criteria: (1) journal citation, (2) introductory psychology textbook citation (five introductory texts), and (3) survey response, i.e. nominations of the most important psychologists of the 20th century (only 5.6% in a survey of 1,725 members of the American Psychological Association responded). The investigators also took into account whether a person (1) was a member of the National Academy of Sciences, (2) APA President, or (3) recipient of the APA Distinguished Scientific Contributions Award, or whether the name in question was associated with a specific effect or method (e.g. the Skinner box). Haggblom et al. did not consider their findings unexpected but acknowledged that some eminent psychologists like Hermann Ebbinghaus were missing (perhaps because, like Wundt, he was more likely to be counted as belonging to the 19th century?). Among the psychologists named, 70 were APA presidents or had received the APA award. This “American and English language bias” is “difficult to evaluate because contemporary psychology is so dominated by Americans.” However, the authors admit that “our sources were all essentially American sources.” – So, the study has many fundamental flaws, not just in terms of the low response rate, the doubtful competence, and the “patriotic” attitude. In Germany, James, Skinner, Rogers, and to an even lesser degree, Hall, would probably never have received one of the higher rankings.

4.3 Wundt’s Work in Selected German Textbooks from 1890 to approximately 1935

The extent to which Wundt’s psychology, epistemology, and methodology are represented in the primary psychology textbooks in Germany since 1890 was examined on the basis of publications by Ziehen (1893), Jodl (1896), Lipps (1903), Elsenhans (1912), Fröbes (1912), Ebbinghaus (1919), Geysler (1912), Natorp (1912), Erismann (1920-1921), Müller (1924), Müller-Freienfels (1933), and Stern (1935). Quotations are included in the Documentation (2011). None of these books presents a description of Wundt’s conception of psychology in such a way that represents his guiding ideas and essential teachings. Thus, at best, the topics remain isolated, such as experimental methodology, psychophysics, and perhaps a very short account of his theory of apperception, his notion of psychophysical parallelism, and a few other epistemological issues. Readers are given a highly selective, occasionally approving, but mostly critical, assessment of Wundt’s work, but little of his own propositions. Such textbooks regularly omit Wundt’s system of categories and principles, theory of language and motivation, cultural psychology and its developmental theory, separate chapters about the CNS, or references to animal psychology and evolution. The general impression might be that Wundt’s psychology was out of date and no longer worth knowing in detail, and that his epistemology and methodology were relatively unimportant.

4.4 The Role of Wundt’s PhD Students and Co-workers

When it comes to the reception of Wundt’s research and teaching as a well-known professor, the first look will be directed at his doctoral students and assistants. They were closest to his work, and many had opportunities in their own academic careers, often supported by their “academic teacher,” to recognize his conception of psychology and comprehensive interdisciplinarity. Thus, a common sense assumption could be that his former or present co-workers were inclined to write about Wundt’s basic ideas and methods in their own textbooks and other publications, potentially including critical comments or creative extensions. The Documentation (2011, pp. 285-308) contains reports of how his co-workers in Leipzig cited specific concepts and which of the main topics were omitted. With respect to Külpe and his textbook, for instance, the question is why Wundt’s innovative achievements simply disappeared and whether Külpe really embraced Wundt’s perspective monism, epistemology, multimethod strategies, and system of principles? Why did he seriously limit the theoretical horizon again such that neuropsychology, psychophysiology, animal psychology, cultural psychology, psychological aspects of ethics, and the need for philosophical reflection of empirical psychology were lost?

The controversies with Meumann did not lead to a sustained animosity, but may have contributed to the stereotype that Wundt was a “pure theorist,” although he mainly objected to a much too simple, theoretically and methodically premature, transfer of experimental findings from the laboratory to everyday life in schools (Wundt, 1909b). According to Brahn (1914, 1920), Wundt never took a negative view of applied psychology, but pointed out that application necessarily relied on basic psychological research. In the Leipzig Institute, he did not initiate any work on applied psychology, but promoted the *Leipziger Lehrerverein* (Leipzig Teachers Association), supported Meumann’s appointment at Leipzig University, and later also ensured that the *Institut für Experimentelle Pädagogik* (Institute for Experimental Education) founded by Meumann remained in place.

Nevertheless, the Wundt–Meumann controversy seems to have left behind a misguided stereotype that is still present today when it comes to applied psychology (cf. Kanning, 2007; Kanning et al, 2007).

Münsterberg (1891, 1900, 1990) rejected Wundt’s view of psychophysical parallelism. Quite contrary, the only possible and justified psychological causal explanation is achieved by recording parallel physical processes. Thus, psychology is just “the doctrine of the content of consciousness.” The view maintained by Münsterberg that the connections between *psychical* processes can only be derived from *physical* processes was rejected by Wundt as materialistic psychology. Münsterberg criticized the theory of apperception and developed his own “theory of action,” which refers mainly to the concomitant function and sensory feedback of muscle activity (“Muskelempfindungen”). Wundt’s system of principles and methodology are absent. Given the quantity and thematic breadth of Münsterberg’s publications, he had a much larger and more impressive oeuvre than Külpe and Meumann. However, his change of interest to applied psychology and his early death in 1916 prevented the continuation of a second volume of his book on *Allgemeine Psychologie* (general psychology). Was Münsterberg arguably Wundt’s most creative doctoral student, alongside Wundt’s student, co-worker, and friend, Emil Kraepelin, who later became a highly influential psychiatrist? Emil Kraepelin’s adherence to Wundt’s psychological system, i.e. psychophysical parallelism, the principle of psychical causality, and the fundamental significance of volitional processes, were referred to in Chapter 2. 4.

Other books from Leipzig also serve to illustrate the distancing from Wundt. Wirth’s (1908) detailed textbook, which is closely related to experimental psychology, was brief and rather cursory with respect to psychological measurement, and also did not refer to principles of methodology or other types of methods advocated by Wundt. In the foreword to his history of psychology, Klemm (1911) states that his view of psychology was influenced by the life’s work of his doctoral father Wundt, and that he was gratefully aware of it. The book, however, conveys the image that Wundt was primarily and principally an *experimental* psychologist. There is a lack of non-experimental methodology, theory of science and – most conspicuously – cultural psychology. In the first textbook about the history of psychology in the 20th century, in the eyes of his student Klemm, the “other Wundt” (as presented by Jüttemann, 2006) is almost completely abandoned.

As evidenced by the extensive correspondence, Wundt maintained professional and, in some cases, cordial contact with many of his former collaborators for many years, even if, as with Külpe, Meumann, and Münsterberg, there were temporary differences (Meischner-Metge, 1990, 1998, 2003; Fuchs and Meyer, 2017). But how does Wundt as an academic teacher appear in the published texts on his 70th and 80th birthdays, and then in the obituary published by the smaller circle of his closer collaborators (Hoffmann-Erfurt, 1922/24)? Beyond their personal memories, what do Wundt’s former students have to say about the guiding principles of his work and about their own, possibly supporting or distancing, theoretical concepts?

4. 5 Festschrift, Appreciations, and Obituaries

The Festschriften and the Obituaries written by close collaborators and friends constitutes an important field of reception research. In contrast to ordinary reviews, such contributions can be assumed to contain concise tributes to the enduring scientific achievements of the honored person, and also to highlight some of the characteristic features of the person. In any case, a discussion of outstanding scientific contributions is to be expected. From reading Wundt’s work, central themes can be determined. Undoubtedly, these include sensory psychology and neuropsychology, the theory of attention and apperception, motivation (will) and feelings, psychology of language, general developmental psychology of culture, the connection between cultural psychology and ethics, the teaching of principles, methodology, as well as the connection with philosophy in order to critically reflect on the philosophical presuppositions of empirical psychology. On a more abstract level, they include Wundt’s interdisciplinary approach and perspectivism, his multimethod research strategies and efforts to achieve a differentiated overview of philosophical and psychological ways of thinking combined with the strong striving for a uniform conception of the psychophysical unity. In addition to the mere appreciation of Wundt and his oeuvre as a whole, which aspects of these central themes are present in the tributes and obituaries?

Festschrift Wilhelm Wundt zum siebzigsten Geburtstage überreicht von seinen Schülern (Commemorative publication for Wilhelm Wundt on the occasion of his 70th birthday, presented by his students (1902, 2 vol.).

The 33 contributions cover the following fields: psychophysics (9), philosophy (8), language psychology (4), motor function (3), other empirical studies (3, work curve, language melodies, measurement methods in emotional research), more general reflections (3), culture and cultural history, psychology of dream (3). The contributions about psychophysics make up a quarter of the volume, and experimental psychology in the broader sense makes up about one third of all contributions.

Tributes on the occasion of the 80th birthday (German titles translated):

Külpe, O. (1912). Wilhelm Wundt on his 80th birthday.

Meumann, E. (1912). Wilhelm Wundt on his 80th birthday.

Wilhelm Wundt – Obituary

Wilhelm Wundt. Eine Würdigung. (Edited by A. Hoffmann-Erfurt. 1st ed. 1922, expanded 2nd edition. 1924. With the participation of the Psychological Institute at the University of Leipzig and on behalf of the German Philosophical Society). The German titles translate as follows:

Part 1: F. Krueger: Wilhelm Wundt as German Thinker (pp. 1-39); F. Sander: Wundt's Principle of Creative Synthesis (pp. 41-43); A. Kirschmann: Wundt and Relativity (pp. 45-61); Hans Volkelt: *Völkerpsychologie* in Wundt's Development (pp. 63-91); O. Klemm: On the History of the Leipzig Psychological Institute (pp. 93-101). Part 2: P. Petersen: The Position of Wundt's Philosophy in the 19th Century (pp. 1-10); W. Nef: Wundt's Theory of Actuality (pp. 11-23); F. Lipsius: The Mechanical Explanation of Nature and Natural Law; F. Kiesov: On Psychical Elements and their Importance in Wundt's Teaching; W. Schmied-Kowarzik: Position and Assignment of Wundt's *Völkerpsychologie* and the Concept of the *Volk* (pp. 69-81).

Later obituaries (German titles translated):

Wirth, W. (1932). The Importance of Wilhelm Wundt in the So-Called Crisis of Psychology.

Fischer, A. (1932). The Philosopher Wilhelm Wundt. On the 100th Birthday on August 16, 1932.

Krueger, F. (1934). Opening of the XIII Congress of the German Society of Psychology in Leipzig from October 16 to 19, 1933. The Status of Psychology (Science of the Soul) in Contemporary Germany.

Hellpach, W. (1948). Wilhelm Wundt – The Great Researcher of the Nature of the Soul. A Commemoration of the 20th Anniversary of his Death (31st VIII 1920).

What image of Wundt is formed here, and which of his scientific and other achievements are highlighted? As a whole, the commemorations are wide-ranging, and include appreciation and reverence, references to his scientific achievements, objective and subjective criticism, as well as explicit miscomprehension and superficial and also disparaging assessments. These commemorations beg the question: What impressions did they convey to other psychologists and philosophers, and which judgements or critique were instrumental in determining the lasting impact of the founder of psychology as a discipline and his scientific work?

Commentary

Ernst Meumann (1912) and Felix Krueger (1922), the successor to Wundt's chair, wrote the longest obituaries. However, Krueger's contribution, and also that of Hans Volkelt, might come across to many readers as poorly structured and conceptually blurred. Krueger's pronounced German nationalistic tone is also disturbing. Several of these tributes seem to struggle to explain which of the topics from Wundt's work represent enduring contributions in the field. Külpe (1912) wrote most awkwardly when discussing the possible meaning of Wundt's psychology, denying a "school" and asking in vain for a lasting single "discovery" as that which distinguishes a famous scientist.

The theory of apperception as a fundamental topic in Wundt's psychology, the principles of psychical causality, as well as his original principle of creative synthesis are referred to in the reviews, however, the system of principles is scarcely explained. The fundamental idea pertaining to the evolution of mind in humans and the importance of cultural psychology for ethics are mentioned here and there, but without sufficiently discussing the basic concepts. Wundt's system of philosophy, epistemology, and attitude towards reflecting on metaphysics are only mentioned, and his attitude regarding the concept of a transcendent soul is not discussed. Thus, it was not evident why he was so firmly opposed to a separation of psychology from philosophy. Consequently, this issue remains largely excluded. Quite a few of these assessments are inadequate and do not hold up upon closer investigation.

What did Wundt's former assistants and co-workers want to develop and advance on their own, at least in a rudimentary way? Empirical field research on cultural psychology and the foundation of cultural and social anthropology have obviously been left to American cultural anthropologists. The further use of correlation statistics, in which Krueger initially had a small part, went unnoticed before it was used more widely by Charles Spearman (Krueger und Spearman, 1907). *Die Korrelation zwischen verschiedenen geistigen Leistungsfähigkeiten* (*Zeitschrift für Psychologie*, 44, 50-114). None of the tributes goes into more detail about Wundt's specific style of thought, or his outstanding capacity for perspective thinking. The comprehensive and interdisciplinary horizon was certainly appreciated, but was it necessary to label this competence – ambiguously – as "encyclopedic" or "polyhistorical?" The decisive question was not articulated or answered. Commemorating Wundt, his theoretical horizon, and decades of research experience in the main fields of psychology, begs the question: Who else could be thought capable of having devised a well-founded concept of psychology as a new discipline? Is there another psychologist of whom this could be expected, even up to the present?

Wundt (1920), in his autobiography "Erlebtes und Erkanntes" refers to many fields of his private and his academic life. However, Külpe, Meumann, Münsterberg, and others are not mentioned at all. Wundt addressed only three of his workmates ("Arbeitskameraden der ersten Semester"), namely James McKeen Cattell, Emil Kraepelin, and Alfred Lehmann from Copenhagen (pp. 310-314). Given the large number of PhD-students and colleagues who were personally impressed by Wundt

and his competence, it is striking that no one attempted to adopt his conception of psychology. It could be expected that at least one of them would be motivated to present Wundt's guiding principle – as Eisler (1902) and König (1903) previously did in their biographies, and then Oesterreich (1923) – and to precisely discuss, elaborate, and further advance it. From today's point of view, Krueger, whom Wundt had wanted as a successor to his chair, was in several respects an unfortunate choice and marked the end of the era defined by Wundt, and not only in Leipzig. The question of a "Leipzig School" (cf. Klemm, 1911) and the differences, despite friendly relations, were discussed mainly by Meischner-Metge (1990, 1998, 2003) and, among others, by Sprung and Sprung (1981). Wundt seems to have explicitly distanced himself from the idea of forming a "school," a "Leipzig school" (*Erlebtes und Erkanntes*, 1920b, p. 148). Meischner-Metge (2003, p. 165) wrote the following about Wundt regarding his academic chair: "And what was even more disastrous was that he held on to his chair for far too long." However, another interpretation is also possible: Wundt realized that there would be no continuation of his work there.

4.6 Scientific Controversies and Philosophical Positions

As a committed scientist, Wundt was a party to a number of academic controversies or made critical statements that triggered them. Controversy here refers to a dispute consisting either of a direct response to critique and a new response, or a multi-step process of reasoning in which several authors participate. Prolonged controversy is characteristic of theoretical psychology and also provides the general background for the reception of Wundt's work, his system of principles, and empirical psychology. Only the outstanding controversies are outlined here (cf. Fahrenberg, 2011, 2015a).

- The debate about the measurability of conscious processes and the mathematical formulation of psychological laws goes back to Kant and was continued by Zeller and Helmholtz, Tannery, and others. Wundt vigorously contradicted Kant, but later moved closer to his position.
- The first Meumann–Wundt controversy emerged over the concept of psychophysical parallelism, as Meumann (1904) did not consider Wundt's explanations to be sufficiently precise. Wundt (1904a) felt misunderstood but added that he invariably posited a physiological basis for every psychical process.
- The second Wundt–Meumann controversy concerning basic research and applied psychology followed Wundt's criticism of Meumann's optimism regarding the direct transfer and application of results from learning experiments in the classroom.
- The Wundt–Bühler controversy about adequate research methodology in the psychology of thinking emerged when Wundt pointed out basic faults in Bühler's research based on self-reports, which were mere "questioning experiments" in Wundt's eyes.
- Freud frequently quoted Wundt, but Wundt remained reserved because he could not find a reliable method to explore „the unconscious.“ Unconscious processes must first become conscious in order to be psychologically examined. Based on his neurophysiological research, Wundt knew of course that brain functions go largely unnoticed and that there are many non-conscious "dispositions," such as drive and instinctive activities. Wundt was involved in a controversy with Zöllner and Ulrici over spiritualist phenomena. This dispute probably motivated him to write his two critical commentaries on spiritism (1879) and hypnotism (1892a).
- In a controversy about epistemology and the definition of psychology, Wundt's position was attacked by Avenarius, Carstanjen, Mach, and Willy. As a result, Wundt elaborated on his position in a series of essays about his critical realism. Sichler's (1914) text and Wundt's letter to the philosopher Vaihinger offer an impression of the past controversies (cf. Chapter 3. 8).
- Wundt's principle of *pure actuality* was strongly rejected by two sides. From their understanding of categories, philosophers, especially Eduard von Hartmann (1890, 1900, 1901), considered it impossible to think of an *accidens* like actuality independent of *substance*. Furthermore, if "soul" is merely a term for conscious experience in constant flow, then this view profoundly contradicts the basic Christian belief. At that time, Wundt's disregard of the postulate of an immortal (transcendent) soul provoked polemical reactions by Christian-oriented philosophers and psychologists against this "psychology without soul" or alleged "denial of the soul." The concepts of I, self, or actor in the sense of unique instances and entities were also absent from Wundt's psychology. Krueger (1931, 1934), and later also Wellek (1962), demanded a return to psychology as "Seelenwissenschaft" (science of the soul), thus likely corresponding to a widespread trend.
- Wundt's categorical assertion of psychical activity and voluntary action (volition) led to criticism of his psychological *voluntarism* by followers of traditional sensualism and English associationism, as well as by the emergent positivism, empiriocriticism, materialism, and Marxist–Leninist philosophers and psychologists.

- In both his logic and ethics, Wundt dealt with the allegation of *psychologism*, i.e. to conduct psychological investigations in areas where psychology is not appropriate. But Wundt (1910a) strongly rejected this psychologism, which sought to displace logical analysis of thought (or ethics) with psychological analysis.
- Wundt was convinced that the relationship between psychology and philosophy (epistemology) is essential. While Herbart, Lotze, Brentano, Stumpf, and probably many other psychologists, assumed – even today – a traditional dualistic belief concerning mind and body, Wundt warned against an empirical psychology based primarily on philosophical deductions. He worried about psychologists transferring their personal metaphysical beliefs into psychology and no longer exposing those presuppositions to epistemological criticism.

4.7 Current German Reception of Wundt's Psychology

The reception research on Wundt's work is limited here to his psychology and epistemology. Additional topics regarding Wundt's cultural psychology, logic, and theory of the natural sciences, as well as large areas of philosophy and the history of philosophy are excluded here because of their wide scope and the author's limited knowledge in those particular areas. The series of publications received in the Wundt-Year 1979/1980 provided a wealth of detailed information about Wundt's biography, the founding of the laboratory and Institute, and his colleagues and other collaborators. However, only relatively few publications dealt with central theoretical issues and conceptions of his work, systems of categories and principles, guiding thoughts and ideas, including their historical context, and research programs (cf. also Chapter 4.8 on the Anglo-American reception of Wundt's work). There are, however, rarely any references to the current significance of Wundt's work or discussion about substantive relationships to more recent theories and research orientations.

How is Wundt's work, his central contributions, and well-established epistemology and methodology represented in more recent times, for example, in the last three to four decades after the Leipzig Congress in 1980? Encyclopedias, handbooks, and well-known textbooks about general psychology and the history of psychology offer the most suitable way to access current reception and the relevance of Wundt's basic ideas, which is at least more valid in terms of content than mere citation statistics.

***Enzyklopädie der Psychologie* (edited by Birbaumer, Frey, Kuhl et al., 1983-2017, 79 volumes.**

Many volumes with sections dedicated to methodology, theory, and research in psychology mention Wundt, but usually only in his role as pioneer or classical psychologist. His name often appears in parentheses only, and typically the first edition of the "Grundzüge" from 1874 is cited, often disregarding the three-volume edition from 1902-1903, revised 1908-1911. Where a reference to Wundt could be expected in terms of concepts and methodology, it is often missing or extremely reduced, sometimes stereotypically. There are, however, some exceptions.

Series I, *Research Methods in Psychology*: While the volume entitled *Methodological Basics of Psychology* does not mention Wundt in the chapter entitled *Research Programs in Psychology* (Herrmann), the second volume, *Data Collection*, includes a few quotes: Wundt on self-observation and experiment in the chapter entitled *Observation and Description of Experience and Behavior* (Feger and Graumann), as well as evidence of common misunderstandings.

Series I, *Biological Psychology* Series: Volume I, *Basics of Neuropsychology*, reviews Wundt's modelling of the apperception process in the chapter entitled *History of Neuropsychology* (Hagner), even reproducing the illustration contained in the *Grundzüge*.

Series III, *Language*: Wundt is mentioned only by name without addressing his psychology of language as a manifestation of thinking.

Series II, *Cognition*: Wundt's theory of attention is referred to in-depth only in Volume II, *Theories of Attention* (Neumann). However, Wundt's central concept of apperception, which includes voluntary (controlled) attention and his original theory are missing from the *Index* of the entire volume.

Series IV, *Motivation and Emotion*: Volume I, *Theories and Forms of Motivation* describes Wundt as a classical psychologist at the beginning of the discipline. The *Theories and Current Problems of Emotion Psychology* (Scherer) and *Expression of Emotions* (Scherer and Walbott), chapters in Volume III, *Psychology of Emotion*, reproduce Wundt's classification of feelings. In Volume IV, *Motivation, Volition, and Action*, Wundt is cited relatively often. *The Act of Willing in the Studies on Reaction* (Gundlach, pp. 361-409) presents important aspects of Wundt's apperception theory, including further development of his view in the later editions of the *Grundzüge*. The chapter entitled *Will and Awareness* (Sokolowski) should also be mentioned with regard to automatic and controlled processing, as well as *Will and Cognition* (Goschke, pp. 583-663).

Series VII, *Comparative Cultural Psychology*: In Volume II, *Experience and Acting in the Cultural Context*, several sentences about Wundt's interest in the "development of mental products" and "emotional motives of these phenomena" can be found in the chapter entitled *Motivation in the Cultural Context* (Kornadt). Since "he pursued an interpretative approach . . . , Wundt's

extensive and interesting analyses and conclusions have not been taken up in further psychological research” (p. 287), unlike Freud. In Volume I, *Theories and Methods of Comparative Cultural Psychology*, Wundt is mentioned in several contexts, however, only in more detail in just one chapter entitled *Historical Positions and Developments in the Psychology of Culture* (Straub) in the sub-section *Wilhelm Wundt: Ethical Psychology as a Complement from the Mental Sciences to Physiological Psychology* (pp. 144-149). The distinct views of Wundt towards Lazarus and Steinthal are referred to at the outset without providing Wundt’s rationale. The following account relies largely on secondary literature, contains some of the typical misconceptions of Wundt’s methodology, and completely fails to grasp Wundt’s intentions and research. Generally, it is neither acknowledged here nor in the cited secondary literature that Wundt created a common theoretical basis of general and cultural psychology with his theory of apperception and, likewise, an important strategy for systematic analysis with his system of principles. The other recurring misunderstanding lies in the allegation that Wundt’s cultural psychology lacks analysis of social interactions – as if he were capable of traveling back in time to analyze past stages of mental development, which were of primary interest to him. Nor is it emphasized that Wundt conceived the beginning of language in sign language (“Gebärdensprache”), i.e. primarily in social interaction and communication.

The much smaller *Handbuch der Psychologie* (13 volumes, Verlag Hogrefe, Göttingen) provides little information about Wundt, but rather general citations without details about Wundt’s conception of psychology. *Allgemeine Psychologie* (ed. Pawlik, 2006), a one-volume handbook comprehending the entirety of psychology, includes a short biography of Wundt, which refers to his “highly innovative research activities” and his “overproductive scientific life” (p. 10). At least one central theme about Wundt appears in Goschke’s article (*Executive Features: Cognitive Control of Intentional Acts*, pp. 249-261; see also Goschke, 2016). Neither Wundt’s term *apperception theory*, nor his theory of feelings, cultural psychology, and language psychology are taken into consideration. A comparison of the numerous German lexica on psychology during the past decades also provides clues about the decreasing interest in Wundt’s conception of psychology, i.e. his central concepts such as apperception, volitional activity, cultural psychology, as well as principles, such as creative synthesis, psychical causality, and perspectivism. However, recent editions of the *Dorsch-Lexikon der Psychologie* (ed. Wirtz, 2019, 19th ed.) contain an article about Wundt and some of his essential concepts.

Textbooks of General Psychology and the History of Psychology

The following four recent textbooks in the field of general psychology were selected in order to gather an impression of the potential level of knowledge possessed by today’s psychology students in German-speaking countries: *Psychology* (ed. Schütz, Brand, Selg, Lautenbacher, 2011), *General Psychology* (ed. Kiesel and Spada, 2018), and *General Psychology: An Introduction* (Becker-Carus and Wendt, 2017). Wundt appears almost only as an historical footnote in the introduction or with very few, mostly superficial, references. In the German edition of the American textbook *Psychology* (Zimbardo and Gerrig, 2004), Wundt serves only as a passing to Titchener (who, however, largely misunderstood Wundt).

Information and assessments contained in books about the history of psychology can also shape views of the past over the long term. This is why Thomae’s (1977) critical viewpoint should be remembered. In his *Psychologie in der modernen Gesellschaft*, he examined the social history of psychology, the development of various schools, the expansion of psychology, and the role of each in contemporary society since the foundation of the Leipzig Institute. The existing attempts at representing the history of psychology are repeatedly criticized. “The most significant error to which historiographers and followers of experimental psychology succumbed was the segregation of psychology from philosophy, which was attributed to Wundt. This shows that most historians essentially live on secondary sources (also Ben-David and Collins, 1966, or Schakian, 1975). ... The fact that so many deviations from the truth underlie the historiography of the ‘beginnings’ is the best evidence for one of the central theses of this book, in which I maintain that the ‘social determinants’ in the development of a science can be found above all in certain groups and group processes, which decide not only the right method, right theory, and right contents, but also the beginning and future of the discipline” (Thomae, 1977, pp. 17-18).

In the *Problemggeschichte der Psychologie* by Pongratz (1967/1984), the name Wundt appears – besides Freud – most often. The broad scope of the history of ideas and problems provides many references and cross-connections. “Despite extensive preparatory work carried out by the fathers of modern psychology, no scientific psychology would have emerged without Wilhelm Wundt (1832–1920). He alone deserves the honorary title of the founder of modern psychology. ... What entitles us to name Wundt as the founder of modern psychology? Three major facts justify this title. First, the independence gained by psychology according to content and method. Second, the construction of a coherent system of psychology. And third, the foundation of a psychological institute” (pp. 99-100). Wundt’s methodical concept was “in principle correct. He recognized the dual citizenship of psychology in natural and mental sciences, and consequently placed the young science on a double methodical foundation comprised of the experiment and the ‘observation.’ In doing so, he fundamentally anticipated the solution in the recurring conflict between methods based on explanation and those based on understanding, as well as methods that were operational-statistical and those that were phenomenological-descriptive. It does not consist of an *either-or*, but of an *as-well-as*. The two approaches are not mutually exclusive but complement each other” (p. 103). “Wundt regards the identification of psychological laws as the last task of psychology. ... Only this should be emphasized: As in nature, the

principle of causality consistently prevails in psychical life. Wundt does not want to seek the causes of mental dynamics in the correlated physiological processes. He rejects physiological reductionism. Psychical processes should be explained by psychical processes. The psyche forms its own causal context (motivational context)” (p. 103-104). Pongratz touches on important aspects in his book, yet it remains strangely incomplete. He hardly deals with Wundt’s epistemology, and only fragments of the methodology are described, neither the specific definition of a psychological experiment to enable controlled self-observation, nor the comparative methods and the theory of interpretation.

In Schönplug’s (2013) comprehensive textbook entitled *Geschichte und Systematik der Psychologie*, he mentions Wundt’s beginnings in natural science, his increasing interest in epistemology and the theory of science, as well as his warning against the separation from philosophy. He is briefly quoted with respect to cultural psychology and otherwise mainly in the sections on experimental psychology. His research on apperception and the theory of feelings is briefly presented; however, his original theory on volition (Wille) and voluntary action is not. Some of the guiding ideas are presented, but essential features are not mentioned, including the comprehensive conceptualization of psychology, the systems of categories and principles, experimental and interpretative methodology, the debate on measurability, multimethod strategies, etc. There are no references to secondary literature about Wundt.

In Walach’s (2013) *Psychologie. Wissenschaftstheorie, philosophische Grundlagen und Geschichte*, Wundt is recognized as one of the great founders of psychology, highlighting the empirical approach, but without giving the central theory of apperception as context. Wundt’s experimental approach, which “rides historically and scientifically on the main current of science at that time and the analysis of the complex into single components and elements” had an impact (p. 182). However, the description of elementary functions can only be understood within the context of Wundt’s greater interest in the process of apperceptive connections and his insistence on compounds as compared to the abstracting of elements. Again, Wundt’s perspectivism, his systems of categories and principles, psychical causality, the principle of creative syntheses, etc. are not represented.

Geschichte der Psychologie. Stömungen, Schulen, Entwicklungen (Lück and Guski-Leinwand, 2014), even in the seventh completely revised edition, contains a series of statements and assessments that are factually incorrect, or at least very one-sided. Therefore, such references are not retained here (all the more so since the authors, on their part, report three examples of misunderstandings in the history of psychology). Examples of misunderstandings include distortions and stereotypes to the effect that Wundt proposed elementaristic and positivistic psychology, wrote a purely descriptive ethnology, and hindered social psychology, etc. Wundt, as a scholar and cultural psychologist whose interdisciplinarity and theoretical horizon encompassing natural and mental sciences was hardly achieved by any other later psychologist, was portrayed here in a highly distorted way.

A knowledgeable account of Wundt’s work, predominantly related to psychology, is provided by Scheerer in his article entitled *Psychologie* in the *Historisches Wörterbuch der Philosophie* (1989, Vol. 7, pp. 1621-1623). “Psychology cannot be reduced to physiology, as certain guiding principles, which are fundamentally different from those of science, but which, however, do not contradict them, can be abstracted from the immediate experience. Wundt’s doctrine of the ‘principles of psychology’ is based on the recognition of an independent psychical causality, the most important components of which are as follows:

- (a) The principle of ‘empirical’ psychophysical parallelism, which states that only the elements of psychical events and their sequence are parallel to neural events and that their connections are carried out in accordance with psychological laws.
- (b) The principle of psychical actuality, which states that the causality of psychical processes can be gathered from the processes themselves, while the scientific causality is consistently tied to a physical substrate.
- (c) The principle of the growth of psychical energy, which contrasts with the principle of the constancy of physical energy and represents a generalization of the principle of ‘creative synthesis’ established in as early as 1862, according to which the results of psychical connections, compared to the elements that constitute them, have new properties incomparable with the elements themselves.
- (d) The principle of relativity, which states that the properties of psychical structures depend on the relations of their elements, such that the elements themselves can be determined by a ‘relating analysis’.”

Scheerer also briefly and succinctly touches on other basic ideas of Wundt; however, he was hardly quoted by other historians of psychology.

The article *Wilhelm Wundt* by Herrmann (1996) in *Report Psychologie* may have had a strong influence on the memory of Wundt as an historical figure. Initially, Wundt is honored: “Wilhelm Wundt is a unique phenomenon, as several characteristics connect, intertwine, and permeate him in a way that, at least in recent times, seems not to have happened again. Wilhelm Wundt was first and foremost a scholar who, more than any other scientist of his time, masterly and precisely incorporated so many different fields of science and participated in their development. ... An undisputed master of basic psychological experimental research in the laboratory, and at the same time the one who wrote the ten-volume *Völkerpsychologie* ... by far the most comprehensive account of this field of science at the time, as well as the co-founder of social psychology, psychological intercultural comparison and, last but not least, language psychology” (p. 520). “Wundt, as the undisputed founder of modern psychological science and its institutionalization, will always remain unforgotten” (p. 525). Herrmann also addresses Wundt’s

concept of the actuality of the psychical processes as well as the principles of creative synthesis and the heterogeneity of purposes. However, despite his specialization in the theory of science, Herrmann refrains from any attempt to reconstruct Wundt's epistemological and methodological conception. Instead, he concludes with a series of critical assessments of Wundt as a "weighty figure of the century" with "none of his views being seriously advocated anymore" since psychology has since advanced beyond his work "in the course of the general development of the mind." – Is this assessment historically adequate?

It was only with the book *Wilhelm Wundts anderes Erbe*, published by Jüttemann and co-authors (2006), that a new phase in the reception of Wundt's legacy was opened. The individual authors had only a few pages at their disposal, but a multidimensional image of what mostly occupied Wundt during the second half of his life emerges: Cultural psychology, ethics, and epistemology. In the introduction, Jüttemann explains Wundt's general concept and makes a strong case for exploiting its potential (cf. Chapter 1 quote).

4.8 Anglo-American Reception of Wundt's Work

The strange reception of Wundt's work in the Anglo-American world demands a separate account. In the beginning, there was William James, Edward B. Titchener, and Grenville Stanley Hall, who, together with Edwin G. Boring and John C. Flugel, historians of psychology, formed a view of Wundt and his work that has persisted ever since. It was not until two generations later that a more adequate portrayal emerged, at least in important aspects, mainly through the work of Kurt Danziger. Wundt's major works are still untranslated, making direct access difficult. More detailed quotes from these English-language sources and comments are included in the Documentation (2011).

"But in spite of the massive early influence of German experimental psychology ... American psychology soon took a very different turn and developed along lines that were actually antithetical to the vision of scientific psychology that had motivated the work of men like Wundt (Rieber, 2001). By the 1920s many American psychologists had come to regard the kind of experimentalism that had been imported from Germany as a model of how not to do psychology, and soon the figure of Wundt, the once highly respected forefather, had come to represent the negative alternative for a discipline that was desperately trying to establish its scientific credentials in America. After a relatively brief period of academic colonialism American psychology had become well and truly indigenized. ... In psychology the flow of American students started almost as soon as Wilhelm Wundt had established the first designated experimental psychology laboratory at Leipzig University in 1879. Among the Wundt students who subsequently had a foundational role in the establishment of experimental psychology in the United States were James McKeen Cattell, Edward B. Titchener, Hugo Münsterberg, Frank Angell, Walter Dill Scott, Edward W. Scripture, and Lightner Wittmer (Tinker, 1980). These all completed doctorates at Leipzig, but there were many, often somewhat older men, who spent time at Leipzig and elsewhere in Germany without bothering with the formality of a doctorate. Stanley Hall, William James, and James Mark Baldwin are well-known examples." (Kim, Internet Source, 2006).

James, Titchener, Hall, Boring, and Flugel

James (1875) reviewed Wundt's *Grundzüge der physiologischen Psychologie* and acknowledged the wealth of thoughts and results. His recommendation reads: "Whoever they may be, they will find this treatise indispensable for study and reference. All we have cared to do has been to call attention to its importance and to the merits of its singularly acute and learned author" (p. 120). In his chapter on "Attention" (1901, 1, pp. 402-458), James extensively quoted Wundt's positions and referred to several of the experiments in Leipzig. He also mentioned Exner and Helmholtz, but ignored the apperception theory as well as Leibniz's contributions in this field. For James, apperception is "a name for the sum-total of the effects of what we have studied as association." James rejected Wundt's theoretical construct since he did not see that the term *apperception* could be useful for psychology, compared to perception, conception, and volition. James, in *Principles of Psychology* (1901, 2, p. 107) did not explain the difference between elementary association and the integrative process of apperception as conceived by Wundt. James seems unaware of Leibniz's psychology, which is so important to Wundt's conception and, in spite of his earlier comment, James apparently did not develop an understanding of Wundt's entire conception of psychology. James' later comments about Wundt were surprising in that they contained superficial, almost bizarre, judgements regarding Fechner's insignificance and the majority of Wundt's writings being incoherent and lacking a central idea, adding disparaging remarks about Wundt in letters to Stumpf and others (cf. Boring, 1929/1950, *Notes*; Danziger, 1980a; Gundlach, 2018; Rappard, 1980; Van Hoorn and Verhave, 1980a).

When Titchener (1904) abandoned his attempt to translate the *Grundzüge*, he wrote in the foreword that this textbook was difficult and barely translatable. This statement undoubtedly influenced and determined the reception of Wundt's work in Anglo-American psychology. After all, the judgment came from one of Wundt's own doctoral students. In addition,

Titchener (1898, 1909, 1921) promoted the fundamental misconceptions of Wundt's research program by asserting a relationship (proximity) to structuralism and introspectionism (cf. Danziger, 2001a; Tweney and Yachanin, 1980). Did Titchener ever grasp Wundt's principles of epistemology and methodology? Another guest in Leipzig, Grenville Stanley Hall (1912), wrote a book entitled *Founders of Modern Psychology* and included a journalistically written chapter on Wilhelm Wundt, which was published separately in German translation in 1914. Hall gave an inconsistent, superficial, and distorted account of Wundt's psychology, causing Wundt (1915b) to publicly distance himself from this "freely invented biography," and there is little sense in quoting and commenting on Hall's writing (cf. Documentation, 2011, pp. 136-137, 249-256), even considering the fact that he became Professor of Psychology and Pedagogy, President of Clark University, and an influential figure in American psychology.

With respect to shaping the image of Wundt, Edward G. Boring, a student of Titchener, was even more influential than Hall. *A History of Experimental Psychology* by Boring (1929/1950) was a widely used textbook in which the chapter on Wundt (pp. 316-347) is the longest about the pioneers of psychology. It includes the following contents: *A biographical and general introduction* (12 pages), *Wundt's System* (4 pages), *Systematic Fundamentals* (2 pages) *Mental Process* (1 page), *Mental Law* (3 pages), *Apperception* (2 pages), *The Work of the Leipzig Laboratory* (6 pages), and a final, half-page appreciation as well as a 4-page Appendix. Opposite the cover, the bronze half-relief of Wundt is pictured, which was made in 1905 by Dr. Felix Pfeifer for Cornell University on the occasion of the Golden Jubilee of Wundt's doctorate in Heidelberg.

"Wundt is the senior psychologist in the history of psychology. He is the first man who without reservation is properly called a psychologist. Before him there has been psychology enough, but no psychologists. ... Wundt held a chair in philosophy, as the German psychologists did, and wrote voluminously on philosophy; but in his own eyes as in the eyes of the world he was, first and foremost, a psychologist. When we call him the 'founder' of experimental psychology, we mean both that he promoted the idea of psychology as an independent science and that he is the senior among 'psychologists'" (p. 316). Boring briefly describes Wundt's biography, including his childhood, studies, academic career, and scientific publications, and he follows the thread of Wundt's main works in order to outline scientific development. He only briefly touches on *Völkerpsychologie*. "Wundt was an encyclopedist and a systematist. He had an almost unrivalled capacity for bringing together a tremendous array of facts into a systematic structure. The parts of such a structure tend to become theses, so that systematic writing of this sort takes on the nature of the demonstration of a proof. Thus, Wundt was also an effective polemicist. In all his work, his method resembles more the method of the philosopher than that of the scientist. At bottom his temperament seems to have been philosophical" (Boring, 1929/1950, p. 327).

Boring does not write at any point about Wundt's idea of the interconnection of these fields of research, methodology, or the idea of a unified view. Neither his coordinated application of the principles of causality and purpose, nor the system of phenomenal experience is a constant flux. "Wundt thought to emphasize this fact by naming the elements a 'mental process'. The force of this term is that it persistently asserts that experience is active in the sense of changing process, not although in the sense of an activity requires that an agent. ... Mind is actual; It is not therefore substantial. It is activity and not passive being. ... Hence it proceeds by way of lawful development and not by way of fixations" (p. 334).

Boring avoided the fundamental issue that was important in terms of the contemporary German reception, which questioned whether this new empirical psychology is still related to the metaphysical (religious) idea of a transcendent soul or if it has become a "psychology without soul" (the terms *soul* and *spirit* are not included in Boring's *Index of Subjects*). "Wundt's fundamental principle of law was that of psychical causality. Under this principle he meant to include all laws of the interdependence of conscious data. It is a principle which holds in the purely phenomenal realm and should not be confused with psychophysical causality, which involves the dependence of mind upon body. It has been argued that cause and effect are physical concepts that can not apply to mind. Wundt's answer to this argument was that psychic causality is different from physical causality, but that the word cause is applicable to mental events if we understand what it means in that sphere. ... Psychic causality is simply the principle of growth or development of the mind, where lawful change is the natural process of an active mind, where lawful change is the natural process. The reader who refers here to Hume's discussion of causality will see that Wundt's doctrine is consistent with it. ... Wundt held not only that the phenomenal mind is always in change but that the changes are lawful. Psychical causality as a principle is merely an assertion that the course and pattern of the constantly flowing, conscious stream depend upon definite laws of sequence, that 'this' regularly follows 'that'. Even though 'this' and 'that' are themselves processes and not substantial fixed things. Under the general law of psychical causality may be subsumed all the other laws" (p. 335).

Boring's *Notes* contain references, further writings by Wundt, biographies (Hall's biography "is inaccurate in some details" and Wundt himself condemned it as "invented from start to finish" (*Erlebtes und Erkanntes*, 1920, p. 155), the names of well-known assistants and students trained by Wundt, in particular the American psychologists, as well as anecdotal reminiscences about Wundt by seventeen of his American students (Pintner, 1921).

Many of Wundt's guiding ideas and fundamental concepts do not appear in Boring's text. For example, the psychology of voluntary action, neuropsychology and, to a large extent, the cultural psychology, as well as Wundt's intentions regarding a general developmental theory. Furthermore, the theory of apperception and the theory of feelings are misrepresented, and Boring scarcely deals with the methodology. He does not explain the importance of self-observation under experimental

control, and bypasses comparative methods and interpretation. Epistemology and methodology are also largely excluded. Given the fact that Boring's book begins with several chapters on the *Origin of Modern Psychology* within philosophy, he could well have explained Wundt's point of view with respect to sensualism (Locke) and psychologically reflected idealism (Leibniz). He makes the false assertion that Wundt "relies primarily on the British tradition" of empiricism and associationism, which provided the philosophical preparation for the new scientific psychology. Bacon, Mill, and Darwin, among others, were important authors for Wundt, but constitute only a small part of his orientation in the history of ideas. Boring obviously did not recognize essential influences on Wundt's thinking, including Leibniz's epistemological perspectivism and the interpretation of psychophysical parallelism, as well as Kant's doubts about an exact and mathematical psychology, and his confrontation with Herbart's teachings. Boring, however, disregarded Leibniz and Herbart, considering only the connection with (English) association psychology and consequently overlooking the voluntary and creative components assumed by Wundt. Not only the numerous misunderstandings and gaps are noteworthy, but also the frequent improper remarks and the reproduction of prejudices.

Feldman's (1932) astonishing remark introducing his article about Wundt's psychology in 1932, i.e. during the hundredth anniversary of Wundt's birth, is noteworthy: "This year marks the hundredth anniversary of Wundt's birth. ... While then, the time for a just appraisal of Wundt is not yet, certain preliminary studies can and need to be carried out now." (p. 615). Feldman's study, which began under the direction of Titchener, resulted in an overview (précis) of the contents of the *Grundzüge*, first edition, 1874, without indicating that in 1903 there was a 3-volume edition, and dismissing many essential aspects, e.g. Wundt's theory of apperception as well as basic issues in Wundt's epistemology and methodology.

Flugel (1933/1964) in *A Hundred Years of Psychology*, followed Boring in many respects and included a 13-page sketch on Wundt, his biography, the foundation of the institute, and his most renowned publications. He also mentioned the books on philosophy but did not elaborate on them. "For psychology he undoubtedly was the most important of the great pioneers and this for three chief reasons. In the first place he was, unlike both Fechner and Helmholtz (but like Bain, who, however, was a lesser man), primarily a psychologist, his physiological and philosophical writings, important as they were, being underboth in interest and ultimate significance to his psychology. In the second place it was he who was the first to conceive of experimental psychology as a science and to give it that name. In the third place he founded the first psychological laboratory as a home for the new branch of science in its tender years, a home in which a whole school of psychologists were, trained and from which they went forth, eager and equipped, to carry on the new tradition wheresoever they might be appointed" (p. 147). The *Grundzüge der physiologischen Psychologie* are "often considered to be the most important book in the whole history of psychology." (p. 148).

Flugel noted that it is hard or impossible to do justice to Wundt's system in such a small space, and mentioned the difficulties caused by the ongoing revisions of these works. Flugel addresses the issue of elementarism, pointing out that to Wundt's conception, these elements are not passive and static units, but interconnected and must be understood as processes, which Wundt's later critics sometimes disregarded. The fundamental theory of apperception is reviewed on one page only. Flugel then, compared to Boring, discusses the experimental work in Leipzig in various fields of research at greater length. He also briefly mentions *Völkerpsychologie*. "This great work definitely brought modern psychology into relation with cultural anthropology, to the advantages of both sciences; ... it is greatly to the credit of psychology that, through two at least among its foremost workers, Wundt and Freud, it has seen the necessity of help and the great possibilities mutual of profit" (p. 280). Elsewhere, Flugel writes with regard to Freud: "In originality, and in intuitive psychological insight, he is born a greater man than Wundt. Wundt saw the logical implications of the work of his predecessors, Herbert, Weber, Fechner, and proceeded to develop them by making psychology an independent science; in this respect his position is unique" (p. 246).

Comment

Flugel's portrayal of Wundt's work was considerably shorter than Boring, and his text contains fewer personal judgements. However, when Flugel highlights Wundt's pioneering importance, it is often in terms of organizational innovation, and less in terms of the originality of thinking. On which selection of works, translations, and degree of language competence are such judgements based? How could an adequate portrayal be achieved if many of the original guiding ideas and central topics of Wundt's overall concept were depicted only rudimentarily here or were completely omitted (and perhaps not even known)? This applies to the idea of the developmental theory of the mind, the theory of apperception as a common basis of general and cultural psychology, neuropsychology, epistemology, advanced methodology, system of categories and principles of psychology.

The *Harvard List of Books in Psychology* by psychologists at Harvard University (4th ed., 1971) contains 744 important book titles from psychology compiled by 19 professors. Wundt and Münsterberg, who was after all the founder of Harvard's large experimental psychological laboratory and pioneer of applied psychology, are completely ignored, while Fechner, Köhler, and Lewin are named, as well as numerous, less eminent, American authors. What reasons could there be for this systematic neglect?

Neither Boring, Flugel, nor Hall adequately portrayed Wundt's work. These three historians, however, seem to have had a fatal influence on Wundt's image and reception for a long time, as their work was reproduced by some German historians as well. From a German point of view, the fundamental deficiencies in the Anglo-American reception of Wundt's work cannot be easily overlooked, as the references section in German publications often proves that up to the present these American historians of psychology were given priority, and occasionally Boring was even the only source. This retroactive effect of American historiography, full of one-sidedness and misunderstandings, thus becomes a fatal aspect of the attitude maintained by quite a number of German authors. Some of the strange judgements and prejudices about Wundt formulated by Hall and Boring have obviously created enduring stereotypes that seem to have been handed down to secondary and tertiary publications. It was only in the next generation that a more comprehensive reading and deeper examination of Wundt's work appeared.

Judd, Mead, and Mischel

Charles Hubbard Judd was Wundt's doctoral student and received his PhD in Leipzig based on his dissertation about perception of space in the sense of touch. Judd published his translation of the *Grundriss der Psychologie (Outlines of Psychology)* "with the cooperation of the author (based on the German edition, 1896a)." This was years before Titchener gave up his attempt at translating the *Grundzüge der physiologischen Psychologie* and decades before Hall and Boring published their distorted picture of Wundt's intentions and research program. "The story of Wundt's American students and their attempts to establish laboratories in the United States is one of the most frequently told in the history of psychology. There is a side to it, however, which has yet to be told. Of all Wundt's American students, the one who has the strongest claim to be regarded as his chief disciple in the United States is Charles Hubbard Judd. Judd accepted Wundt's voluntarisms and the doctrine of creative syntheses. He also accepted the view that experimental psychology needed to be complemented by a non-experimental *Völkerpsychologie*." (Brock, 1992b, p. 17).

Brock examines Judd's main work on *The Psychology of Social Institutions* and its reception in the United States in the context of the controversies about *Völkerpsychologie*, as well as social and cultural psychology. Judd was one of the very few Americans interested in Wundt's epistemology and philosophy. Judd also reviewed (1897) Wundt's book *System der Philosophie*: "The influence which Wundt has exerted in this country through his writings and teachings in the department of psychology, is so far-reaching and important that the comparative lack of familiarity with his contributions to logic, ethics, and philosophy seems almost surprising. The explanation is perhaps to be found in the fact that American students who go to Leipzig devote most of their time and attention to experimentation in the Psychological Institute. Too often they take with them, or develop, a scientific spirit so radical in its character that the study of any strictly philosophical discipline is regarded, not merely as needless, but even as positively injurious. The style in which Wundt writes is by no means easy; and this, together with the voluminousness of his works, doubtless tends to reduce the number of readers who devote their time to other than the treatises on psychology, where Wundt's importance as a pioneer in investigation and master in scientific elaboration renders acquaintance with his doctrines indispensable. Yet, even for a clear comprehension of these psychological doctrines, some knowledge of Wundt's philosophical position is essential; and the system which is the final result of broad scientific and philosophical training is in itself worthy of careful study." (1897, p. 370).

Judd primarily reviews Wundt's epistemology and its essential differences to idealism, and then natural causality and final causality (teleology), and briefly touches on psychophysical parallelism (Leibniz) as opposed to Spinoza. "The two principles of cause and final cause are therefore not mutually exclusive but rather mutually supplementary" (p. 383). "The ultimate reality of the individual being is found to be the will." (p. 384). "Philosophical investigation has shown the necessity of these ideas as the last analysis of immediate experience." But philosophy must refrain "from attempting to go beyond the proof of the necessity of the idea to a necessity of some reality corresponding to this idea. ... The influences which have had a part in this system of philosophy come from both science and philosophy. On the one hand, we see the effects of the teachings of Leibniz, Herbart, and Kant. The two latter Wundt mentions in one of his prefaces as potent in their influence on his thought, while his frequent references to Leibniz, especially in his *Logik*, show his thorough acquaintance with that thinker. The empirical character of the system is too striking to require special mention. The best short phrase for the description of the system is that which Wundt is making use of in recent articles, "critical realism." (p. 385).

As Brock pointed out (1993, p. 238): "Wundt provided concise accounts of his views in several places. One of these can be found in his *Outlines of Psychology*, which was 'translated with the cooperation of the author by Charles Hubbard Judd, PhD (Leipzig)' published in 1897." He could have mentioned that Judd had already paved the way for an adequate reception and appraisal of Wundt's epistemology and philosophy in 1892 for an English-speaking audience. He made quite clear that Wundt followed the philosophical tradition of Leibniz and definitely not the English school of sensualism and empiricism established by Locke and his adherents. Thus, Judd provided an intellectual lead with respect to both the translation of the *Outlines* and the introduction to Leibnizian principles in Wundt's epistemology. How much of the writings over the next decades could have been spared from being superfluous and dispensable if Judd's expertise had had more of an impact on American psychologists?

George Herbert Mead is occasionally cited as an American scholar with an interest in Wundt's work. In *Social Psychology as a Counterpart to Physiological Psychology* (Mead, 1909), he briefly referred to Wundt's cultural psychology (or "folk psychology") after critically discussing the notion of social psychology from the point of view of McDougall, Royce, Baldwin, and others. "The second position to which I wish to call attention, and whose implications I wish to discuss, is that the consciousness of meaning is social in its origin. The dominant theory at present, which is most elaborately stated by Wundt in the first volume of his *Völkerpsychologie*, regards language as the outgrowth of gesture, the vocal gesture. ... Out of the emotional signification has grown the intellectual signification. ... Thus, reflective consciousness implies a social situation which has been its precondition." (p. 406-405). Years later, Mead (1919) then reviewed the translation of Wundt's *Elemente der Völkerpsychologie* ("Folk psychology"), struggling with the terminology, i.e. the notions and connotations, in German and English of *Völkerpsychologie*, social psychology, and cultural psychology. Although being critical as to some interpretations given by Wundt and the assurance with which Wundt offers them as final solutions, e.g., as to the development of the arts, the origin of the belief in the soul, and the development of religion. "But with all its shortcomings the treatise leaves the reader with a sense of human development as more comprehensively and simply presented from the standpoint of psychology than from any other point of view." (p. 536). – There is, however, no indication that this book presents but a simplified overview on the 10-volumes *Völkerpsychologie*.

Only gradually was some of the criticism rejected, thus creating a more comprehensive and accurate picture of Wundt's work. In *Wundt and the Conceptual Foundations of Psychology*, Mischel (1970) undertook to examine Wundt's conception of psychology in an historical context in order to answer questions about its present importance. It deals with the questionable scientific status of self-observation and Wundt's rejection of the materialistic interpretation of psychical processes. For example, Mischel rejects the interpretation that Wundt had actually related psychical connections to laws in connecting chemical elements to compounds (p. 5). – In fact, the differences from natural causality are subjective connections, such as creative synthesis, value orientation in psychological explanations, and conscious purposes as being evident in motivation. Because of these distinctive features it is impossible to reduce psychology to physiology.

Mischel wrote the following about psychophysical parallelism: With his formula consisting of two points of view, Wundt hopes to conform to all the facts. There is no reduction of the mental to the physical (as commonly assumed with the epistemological tradition of separating the inner and outer experience). But if the immediate experience is private, how can this experience be the subject of a "(public) science of psychology?" In two sections, Mischel discussed "The experimental study of the mind" and "Mind lost and mind regained." Wundt would have recognized the difficulty of the purely introspective procedure and hoped to control self-observation by repeating the process under experimental conditions, not directly by other observers, but only within an observer. ... "In order to make psychology both independent of, and compatible with, physiology, Wundt identifies the mental with 'subjective experience' – physical objects, bodily behavior, anything publicly accessible falls under the point of view of the natural sciences rather than psychology. This Cartesian starting point breaks the connection between inner processes and outer circumstances and behavior" (p. 16). Mischel acknowledged that Wundt had ascertained an essential difference between the humanities and the natural sciences, i.e. a difference in explanations and in terms of purpose and values being distinct from physiological interpretations. This interest in "mentalist questions" was also recognized by Mischel in the description of conscious and willful control of attention, expectations of value, etc. He generally agreed with Wundt and acknowledged that psychical causality differs from the physical and therefore no laws of nature, Galilean or Keplerian laws of the mind, can be discovered in "the study of mind." It is worth noting that Mischel, unlike Hall, Boring, Flugel, and others, reviewed Wundt's epistemology and methodology in more detail. However, his discussion could still have benefitted considerably by referring to Wundt's definitions and explanations in *Logik* (1921).

Renaissance of Interest in Wundt's Psychology (Centennial 1979/1980)

The memory of Wundt's foundation of the laboratory in 1879 inspired a considerable number of publications about Wundt and his work a century later. Most of these articles are contained in volumes and special journal issues published by German or American psychologists (Bringmann and Scheerer, 1980; Bringmann, Bringmann and Tweeny, 1980; Meischner and Metge, 1980; Rieber and Robinson, 1980; Rieber and Robinson, 2001, 2nd ed.). Such "Centennial Collections" were reviewed by Smith (1982) in *Wilhelm Wundt Resurrected*.

There is a wealth of biographical details, historiographic studies about the foundation of the laboratory at Leipzig University (rather a process than a certain year), the institutional development of psychology, Wundt's assistants and students and, of course, specific aspects of Wundt's work and its impact, appraisal, and critique. However, there was apparently no attempt to work out a systematic overview of his complete work, and many important topics remain absent. For example, his work on neuropsychology and animal psychology was excluded, and his cultural psychology was mentioned only marginally. There were no attempts to formally reconstruct Wundt's theoretical system or at least some of its essential aspects. None of these contributions contains a systematic description of Wundt's epistemology and methodology as represented and explained in his *Logik* (1921). His ethics as well as anthropological and philosophical ideas are also completely ignored. However, a

few contributions attempted to portray Wundt's guiding principles in order to understand the general theoretical conception of this work. Again, additional references and more quotations can be found in the Documentation (2011).

In the preface to the Wundt Centennial Issue (*Psychological Research*, 1980, p. 42), Bringmann and Scheerer state: "Wundt is not recognized today merely as an experimental psychologist. As a matter of fact, the recent renaissance of interest in Wundt's psychology, in part motivated by historical events which form the rationale for the centennial celebrations, often has taken a somewhat 'revisionist' turn. The traditional image of Wundt as the 'Father of Experimental Psychology' has given way to a new awareness of the complexities of his work which transcends the limits of experimental psychology, and of psychology, indeed altogether. The largely neglected international psychology is in the process of being rediscovered, the historical background and philosophical foundations of Wundt's outlook on science are subjected to careful study, and the political dimensions of Wundt's activity theories and theories are being brought to light. It goes without saying that this tendency is a fruitful one, in view of a traditional historiographic approach which was centered, in a rather one-sided fashion, on Wundt's contributions to experimental psychology as seen through the eyes of some of his early promoters. Nevertheless, even with respect to Wundt as an experimental psychologist our historical knowledge is far from complete, and the present collection of papers is mainly intended to fill in some of the blanks on our map of this part of the Wundtian territory" (p. 1).

"Danziger reveals Wundt's true conceptualization of the experiment in the context of his philosophy of science, as an approach which is much more congenial to the present 'new look' in the theory of science than to the 'received view' based on operationalist empiricism. ... Rappard closes the underlying unity of Wundt's work, which resides in the central concepts of system and structure. Danziger's and Rappard's contributions are two instances of a type of 'reappraisal of Wilhelm Wundt' which could help the experimental psychologist to gain a proper understanding of the historical background of his work" (p. 3). "The participants expressed differing opinions about the historical progress of our science in the first hundred years of its existence. While it is not our task to pass judgement on this matter, we feel that considerable modesty is appropriate if we the compare monumental unity that psychology has reached at the hands of Wilhelm Wundt with the present patch-work, if thriving, status of our science" (p. 3).

In his contribution *Wundt's prominence and popularity in his later years*, Anderson (1980) discussed the more or less complicated history of translating some of Wundt's books into English, several obstacles to Wundt's reception, and his importance, which had also decreased under the influence of the war, stating: "loss of some popularity but no decline in eminence" (p. 100). *Wilhelm Wundt and the making of a scientific psychology* (edited by Rieber and Robinson, 1980) was another milestone regarding the commemoration of Wundt's legacy. Among the many historiographic contributions, a few are highlighted here.

In *Wilhelm Wundt – Problems of Interpretation* (pp. 435-445), Blumenthal (1980) describes the highly questionable reception of Wundt's work in the United States, the problematic translations and Boring's misconceptions. According to Blumenthal there are nine prominent summarizations in Boring's *History* (1950): "(1) that Wundt's psychology began as physiological psychology; (2) that Wundt claimed that psychology was one of the natural sciences; (3) that 'scientific' meant experimental to Wundt; (4) that Wundt chose introspection (in the classical Anglo-American sense of that term) to be his primary method; (5) that Wundt borrowed from British associationism and was an elementarist (in the sense of mental chemistry models); (6) that Wundt was a mind-body dualist; (7) that Wundt opposed the implication of an active agent in his view of mental processes; (8) that Wundt's psychology was exceptional for its narrowness and, finally, (9) that Wundt's life was withdrawn from the affairs of common men" (p. 437)." Based on his critical discussion Blumenthal wrote: "In conclusion, concerning attempts to refute E. G. Boring's widely accepted summarizations of Wundt (in which Boring took Titchener, his revered teacher, as a guide) any attempts at revision are up against a weighty tradition of textbook writing: it is a tradition that has provided very many psychologists with a satisfying picture of psychology's past and its progress" (p. 444).

Titchener, who has been mistakenly regarded as Wundt's representative in the United States, also shared responsibility for distorting important views. In this context, Blumenthal states: "American textbook accounts of Wundt now present highly inaccurate and mythological caricatures of the man and his work" (1970, p. 11). Three decades later, Blumenthal modified his judgement by hopefully stating: "But it is a caricature that current historians are now working to correct ..." (1997, pp. 117). However, the general verdict appears to still be valid with very exceptions few. A fundamental contradiction exists when Wundt's eminence as an outstanding scholar is assessed. Quoting Blumenthal (1997, p. 117): "At beginning of psychology's modern era ... stands the formidable instigating presence of Wilhelm Wundt (1832 – 1920), the strongest initial force behind those beginnings and still the most prolific psychologist of all time." (see also, Blumenthal's article *Leipzig, Wilhelm Wundt, and psychology's guilded age*, 1998).

In *Wundt's changing conceptions of a general and theoretical psychology*, Van Hoorn and Verhave (1980) refer to James's judgements on Wundt and, above all, pay tribute to Wundt's central idea, the concept of psychical causality, which is closely linked to his voluntarism, psychophysical parallelism, and sustained antimaterialism. Psychical (mental) causality and creative synthesis determine the psychological process and creative acts of will. Psychology is the science of immediate experience, and desire, feeling, perception, and thinking are related to each other in every psychical process. "In the present essay we have attempted to track the development of Wundt's conception of a general and theoretical psychology over about half a century." According to Van Hoorn and Verhave, Wundt would have changed his view on many topics, but several

invariants can be observed, especially after 1874: “Four leading notions especially remain unchanged: 1. The strong conviction concerning the inadequacy of simple, uncontrolled introspection reigning supreme in the older empirical psychology; 2. That psychology forms the basis of the humanities, 3. That the mind is not a substance but a process, and 4. That as process and actuality, the human mind is a mirror of the world (an explicit reference to Leibniz and his notion of the mind). ... In this essay we want to explore the thesis that the type of consciousness psychology which Wundt and his collaborators worked out, has almost had no following in twentieth-century psychology. ... At the turn of this century, everyone in psychology and philosophy knew Wundt and read his works, but few have followed him” (p. 74).

Wundt rejected materialism as well as spiritualism and modern positivism. In this context, the authors address the contemporary religious context of Wundt’s writings and the “psychology without soul” around 1890, which was an unusual approach in terms of other studies about Wundt. They recall the dismissal of professors whose teachings were considered materialistic, and therefore subversive to religion and morality. “Possible reasons for the demise of Wundt’s system of psychology were tentatively attributed to a number of internal and external factors such as his voluntarism and his idiosyncratic notion of experimental psychology, and the rise of clinical, industrial and educational psychology.” (p. 110). Wundt tried to synthesize a number of very different philosophical and scientific traditions. So, there was critique that he had adopted and incorporated the ideas of others, including Leibniz, Kant, Heraclitus, Fichte, Schopenhauer, and Fechner. On the other hand, Van Hoorn and Verhave believe that Wundt developed a uniform system of psychology (cf. Araujo’s comments on *Wundt’s mature project of a scientific psychology*, 2016, pp. 167-208).

Rappard (1980) is also one of the very few authors who studied Wundt’s theoretical conception in more detail. Using several quotes from the *Grundzüge*, the *Grundriss* and the essay *Über psychische Kausalität*, Rappard describes some of the guiding ideas. According to him, Wundt’s principle of actuality means that psychology should both abstain from metaphysical hypotheses and rely on the immediate internal and external experience. The dynamic connections in the present flow of experience are characteristic, in contrast to the separation of objects of experience and the experiencing subject in the natural sciences. Wundt makes the epistemological attempt to not reduce the primary difference between the two spheres of sciences to the distinction between inner and outer objects but seeks to comprehend by means of recognition and knowledge. This dynamic and continuous connection due to synthesizing processes is a central topic in the psychology of consciousness. The individual representations are to be understood as a synthesis of elementary sensations and related feelings. The level of present consciousness depends on the process of psychological synthesis, although the lower threshold cannot be determined. Rappard, like only a very few other authors, reviews Wundt’s psychology of volition and the underlying voluntarism, his theories of apperception and association, as well as psychical and physical causality. He concludes with an attempt at a monistic interpretation of Wundt’s psychology.

Leary (1980), in *One hundred years of experimental psychology: An American perspective* reported on the symposium organized by the *American Psychological Society* to mark the year of remembrance in 1979. The discussion concerns how psychology in the United States developed since Wundt, and what forecasts were attempted. The overview of Wundt’s interdisciplinary program of psychology, given by Woodward (1982), is characterized by its comprehensive horizon. He provides numerous references as well as a tabular overview of Wundt’s work as a whole, including the fields of psychology, epistemology, ethics, and philosophy. In a second table, he attempts to assign the topics of the dissertations supervised by Wundt to these areas. Woodward also inserts the figure depicting Wundt’s neuropsychological modelling of the *apperception center*, but without commenting on it in detail. He credits – with some critical remarks – Wundt’s program and mentions the misconceptions on the part of Titchener and James. In *Wilhelm Wundt (1832-1920) and the origins of psychology as an experimental and social science*, Farr (1983) points out some facets of the American reception of Wundt and calls for a contemporary reappraisal of Wundt’s work. He maintains that an important obstacle to the reception of the “social science” aspect of the work is due to the influence of Boring and other historians of psychology, who limited scientific psychology to experimental psychology. Another reason is due to the long dominance of natural science and behaviorist orientations. In light of this, Wundt’s conception of psychology remained strange and incomprehensible to psychologists in those fields. Farr, however, describes Wundt’s influence on Durckheim and his conception of collective cultural-psychological processes as well as on the psycholinguist G. M. Mead, who was in Leipzig in 1888.

Brock (1992, p. 17) commented on the ‘reappraisal’ of Wilhelm Wundt in American textbooks: “The fate of Wundt’s *Völkerpsychologie* remains one of the great mysteries of psychology’s history. Wundt is often described as the ‘founder’ of modern psychology and yet his work on this subject has been virtually ignored.” Brock also added that “Between 1970 and 1980, Blumenthal and Danziger published a series of works in which they criticized the mythical accounts of Wundt in history textbooks. The source of these accounts was E. G. Boring’s *History of Experimental Psychology* (1929/1950). Subsequent generations of textbook writers had merely copied from other textbooks without consulting original sources. Boring’s flawed account had become increasingly distorted as it was passed on from one generation to the next. How did the textbook writers of the 1980s respond to this challenge? This work examines some of the changes which were made and the explanations which were given for them.” (1993, p. 235).

The renewed interest in Wundt’s legacy peaked during the commemoration year in 1979/1980 in both German and English. This peak is noticeable in statistics obtained from the *PsycINFO* Database and the *German PubPsych* as well as from

Google Ngrams (cf. Chapter 4. 2. 3). However, the number of related contributions to Wundt during these years signifies an increase of interest in Wundt's psychology, yet was neither a comprehensive overview on Wundt's work, nor attempts at reconstructing essential theoretical and methodological concepts using contemporary terminology.

Two decades after the first edition of *Wilhelm Wundt and the making of a scientific psychology*, Rieber and his co-editor Robinson (2001) further investigated Wundt's eminence in *Wilhelm Wundt in history: The making of a scientific psychology*. Some of the authors already contributed to the first edition and then continued their work, while others joined for this edition. Altogether it contains eight chapters. A number of chapters concern certain aspects of Wundt's biography and research, e.g. Robinson writes about *reaction-time experiments*. Rieber (2001) presented an overview and discussion on Wundt and American psychology "to demonstrate how Wundt and his ideas were both assimilated and transformed through a process that we shall refer to as the Americanization of Psychology" (p. 147). Once again, the chapters by Danziger and Blumenthal on Wundt's points of view are outstanding.

In *A Wundt Primer. The operating characteristics of consciousness*, Blumenthal (2001) describes the principle of actuality and creative synthesis. He, too, acknowledges how difficult it is to gain access to Wundt's work. He turns to Wundt's psychology of language, theories of emotion and volition, and generally believes that "looking back over the breadth of Wundt's life and thought, we can see the movement of a spirit of optimism in the form of a faith in the creative capacities of human consciousness which include its ability for endless advance and constructions" (p. 142). Later, influenced by the world war, Wundt developed more of a cultural pessimism.

Noteworthy is Diamond's (2001) essay on *Wundt's first phase of work in Heidelberg*. Diamond cited biographical details and mentioned the first publications written about Wundt's increasing self-reliance, pressing questions, frustrations, conflicts, lectures, anecdotes, gossip, and insinuations. Controversies with Hering, Bernstein, Helmholtz, Munk, et al. are discussed, and Diamond suggests that Wundt adopted similar thoughts from Bain, Drobisch, Horwicz, Lange, and others. Diamond remains stuck in the details without touching on Wundt's outstanding research program and its theoretical concepts and methodology. Diamond develops a negative image of Wundt's character and motives and concludes: "...if these statements are true, or approximately true, Wundt's actions must often have impeded the progress of experimental psychology. ... It is necessary to face the realities of his character and to ask how they influenced his conduct toward his contemporaries as well as their conduct toward him. That task remains to be done" (p. 63). The editors, Rieber and Robinson, insisted on reprinting the chapter from Diamond in 2001 although it is unobjective and written with distinct antipathy. Blumenthal, in a footnote to his contribution to this volume, distances himself from Diamond's style and his "high levels of vitriolic intensity" (p. 142).

Greenwood (2003) discussed the relationship between Wundt's *Völkerpsychologie* and experimental social psychology: "Wilhelm Wundt distinguished between "experimental psychology" and "Völkerpsychologie. It is often claimed that Wundt maintained that social psychological phenomena, the subject of matter of *Völkerpsychologie*, could not be investigated experimentally but must be explored via comparative-historical methods. In this article it is argued that it is doubtful if many of the passages usually cited as evidence that Wundt held such a view actually support such a view" (p. 70). In this article I treat *Völkerpsychologie* as an early form of social psychology, because I maintain, that Wundt did recognize the social dimension of cognition, emotion, and behavior. *Völkerpsychologie* was in fact translated as 'social psychology' in Charles H. Judd's edition of Wundt's *Elements of Psychology* (Wundt, 1897/1902). However, it is worth noting that there is some dispute about how *Völkerpsychologie* should be translated." (p. 72). "It seems fairly clear that Wundt thought that at least some 'higher' cognitive processes can be studied with the methods of both experimental psychology and *Völkerpsychologie*." (p. 80). "Despite his recognition of the social dimensions of psychological processes and their products, Wundt does not seem to have been much concerned with the synchronous social psychological dynamics of cognition, emotion and behavior in the *Völkerpsychologie*. Moreover, it was largely because Wundt was concerned with these diachronic developmental questions that he rejected experimental introspection as an investigative method. Introspection appears to have been rejected not because *Völkerpsychologie* is concerned with the supra-individual social dimensions of psychological phenomena but because it is concerned with the historical evolution of (individual and social) psychological processes, which is of course not accessible to introspection" (p. 83). "Despite Wundt's suggestive remarks about differences in linguistic forms providing evidential grounds for inferences about social psychological motives, he never really developed this suggestion in practice, and his own pioneering work on linguistics focused almost exclusively on individual psychological processes in sentence production. Thus, Wundt is justly recognized as a founder of psycholinguistics (Blumenthal, 1975; Leahey, 1979) but not of socio- or cultural linguistics." (p. 84).

Danziger's Interpretation of Wundt's Psychology

In the English language, Danziger's contributions stand out when it comes to understanding Wundt's experimental psychology and theory of science. He also contributed to the interpretation of Wundt's notion and implementation of *Völkerpsychologie*. Born in Germany, Kurt Danziger emigrated in 1937 to South Africa and later held a professorship in Canada at York University, Toronto, after studying in Oxford, England. Danziger's Wundt interpretation is notable for its more in-depth analyses and comments on social and psychological aspects of the new experimental psychology in the Leipzig laboratory. His

reflections on the essential aspects of the *Völkerpsychologie* may be considered an attempt at reconstructing the central issues (1979a, 1980a, 1980b, 1980c, 1980d, 1983, 1990, 2001a, 2001b). Thus far, Danziger's Wundt reception was rarely, and at most briefly, cited by German authors. Here, several of his comments are quoted, which refer to neuropsychological apperception theory in Chapter 3. 3, the social psychology of the experiment in Chapter 3. 5, and cultural psychology in Chapter 3. 6.

In his essay entitled *On the threshold of the New Psychology: Situating Wundt and James*, Danziger (1980a) compared the many similarities in their views, as well as the differences. The ideas of both thinkers are of paramount importance to the new psychology. Danziger explores the areas they have in common despite belonging to distinct intellectual traditions. Both reject the bulk of the psychological theorizing of their predecessors, i.e. schematism and abstractions rather than empirical observation, and demand beginning with what is present in the experience, i.e. the actual processes (Wundt) or the stream of consciousness (James). Both criticized the "intellectualism" of previous authors and volition played an important role for both (Wundt: affects and will; James: interests and will). Voluntary action and desire are not reducible. "Both developed a conception of psychology that was designed to encompass physiological and mental mechanisms as well as the directive and 'synthesizing' activity of the subject. In both cases this was accompanied by revising earlier rationalistic schemes in the light of dynamic processes which, in nineteenth century language, were termed 'volitional'" (p. 368). For both thinkers, there was a close connection between the psychology of desire and ethical considerations. Both psychologies were guided by combining the demands of the natural sciences and cultural values. It would be a misconception to understand both as psychologists in today's sense and to overlook their deep philosophical involvement.

Strong, newly created schools then rejected the delicate link between philosophical and psychological concerns, which were so typical for Wundt and James. Wundt was influenced by German idealism, Leibniz, and Kant, and from them he derived the central themes of his psychological system, including an interest in creative psychical synthesis, the view of the mind as an activity, and the importance of "apperception as the key to the structure of consciousness." In the tradition of English empiricism, James hardly had a thorough understanding of the German intellectual tradition, and also created misunderstandings. Further misunderstandings arose because large parts of Wundt's work about theory of science and methodology were never translated. Thus, many American psychologists never heard of it, nor were they able to read Wundt's extensive *Logik*. Had they done so, they would not have liked what they read there since Wundt's careful analyses of the possibilities and limitations of psychological experimentation would not have been in line with the bold goals of would-be science. Psychology means empirical humanities for Wundt, while for James it was just another model of science since he was not involved in the argument between the natural sciences and the humanities. ... Insofar as it is possible to speak of a mainstream in the development of psychology in the West, it is clear that mainstream followed the Jamesian rather than the Wundtian model in almost every respect. This is obviously a function of the long period of American predominance in the development of the discipline during the first century of its existence. For the earlier generations of American professional psychologists James not only spoke out of an intellectual tradition that was as familiar as Wundt's was alien, but the kind of psychology envisioned by James was in any case more in keeping with their own interests than was Wundt's. To tie the institutional growth of psychology to the exceedingly slow and unglamorous development of an integrated systematic science was almost to commit professional suicide. Far quicker results could be expected if psychology could justify itself by its promise of the practical control of individuals. No prestige or security was to be gained by associating psychology with social sciences whose repute and strength was considerably lower than psychology's own." (p. 377).

What remained was a ritual gesture of respect to Wundt for his experimentation without realizing that Wundt would not have accepted most of those experiments that were later conducted as experiments. Danziger wished to reopen the then rejected questions that Wundt, unlike James, was particularly interested in: "As long as we do not give both their due, we will have a distorted view of the past and therefore of the present" (p. 378).

In summary, Danziger wrote: "We know that most psychologists turned a deaf ear to Wundt. Three major factors were at work here. In the first place, many influential psychologists of the younger generation were swept up by the wave of positivism which strongly affected fundamental thinking in the physical sciences around the turn of the century. From this point of view Wundt's notion of psychological causality was clearly just a piece of metaphysical baggage which had to be dropped if true science was to prevail." (Danziger 1979a). ... The second factor in the transformation of psychological methodology involved the development of a very strong interest in the possible practical uses of psychology to the point where psychological technology became equated with psychological science. (Danziger 1979b). ... From this perspective Wundt's special methodology geared to the goal of a pure explanatory system made even less sense. Finally, the historical demise of Wundt's dual methodological solution was sealed by the overwhelming influence of a radically individualist approach to psychology for which even social psychology was the psychology of individuals and for which Wundt's group psychological and historical approach and methodology were simply incomprehensible (Danziger, 1980c)." (p. 378).

Danziger (1980d) further discussed *Wundt's psychological experiment in light of his philosophy of science*. The generation of experimental psychologists after Wundt generally did not share his strict definition of a psychological experiment and did not accept the meaning – or even the existence – of psychical causality. Instead, purely descriptive, introspective, or at least phenomenological methods became the actual goal. "To use a somewhat anachronistic modern terminology one might

say that Wundt tended to draw on qualitative introspective material in the context of discovery and to rely on relatively objective methods in the context of verification. For instance, his tri-dimensional theory of feeling is introduced with the use of introspective illustrations, but he attempted to verify it by means of objective of affective responses” (p. 116). – “He clearly considered these comparative social psychological methods to have far greater scientific value than what he regarded as the rather shoddy travesty of experimentation practiced by many of his psychological contemporaries and successors” (p. 120).

This strategy is not so different from the approach of today’s psychologists, although the introspective contexts in which they developed some of their hypotheses are rarely communicated. “Under the weight of all these influences Wundt’s original vision for the science and the method of psychology was rather quickly and unceremoniously buried. Its tombstones in later historical textbooks took the form of a few strange inscriptions which bore little resemblance to the living form of the original. From the vantage-point of our own times limitations the limitations of Wundt’s approach are not difficult to discern. But in the meantime, we have also since learned to limitations the grave and dubious biases of those who buried him. This suggests that there may be something to be gained by a more sympathetic and constructive attempt at understanding Wundt’s decisive historical action at launching the first systematic program of genuinely psychological experimental research. At the very last it is clear that he had a degree of sophistication in the fundamental questions of scientific method that was not matched by his psychological successors ...” “The questions he raised about the interrelationship between psychological theory and about the appropriate requirements for experimentation in psychology are not by any reasonably closed questions. If a consideration of Wundt’s solutions causes us to take a fresh look at our often implicit assumptions on these issues, we may come to regard his ideas and practice as of more than ‘mere’ historical interest” (Danziger, 1980a, pp. 120-121).

In his essay entitled *Wundt and the temptations of psychology*, Danziger (2001a, p. 90) describes the traditions in which Wundt’s thinking developed, i.e. mechanism, intellectualism, and individualism. Danziger also addressed the difficult American reception history of Wundt’s views, which were often misrepresented and misunderstood. As one of the barriers, he cites the writings of Titchener and his one-sided understanding in portraying Wundt as an introspectionist: “Here one meets the Wundt of textbook myth, the ‘structuralist’, the ‘introspectionist’, the ‘empiricist’ Wundt. More recently, there has been a little house cleaning in this intellectual slum though no one should expect rich insights from this source (Brock, 1993).” In several of his articles and chapters, Danziger dealt with important guiding principles and issues in Wundt’s work, and thus promoted understanding in an exceptional manner. This also applies to experimental methodology, social construction, and the distribution of roles between the investigators and the investigated. Important – not only for the Anglo-American audience – is the attempt to explain the conception of “psychical causality” in Wundt’s psychology, even if the systems of principles and the methodology could be conveyed more systematically. The comparison between Wundt and James could further encourage more precise examination of the convergent and divergent aspects in the thinking of both pioneers, including their typical views, philosophical traditions, and the essential consequences for the general orientation of psychology. On the other hand, such comparisons may be problematic since they might lead to simplifying juxtapositions and could thus induce new stereotypes. Danziger neglected to mention a serious difference, namely that James’s psychology originated primarily at the writing desk, while Wundt leant on a decades-long empirical research program. – To sum it up, Danziger’s articles contribute substantially to a more adequate representation of Wundt’s psychology and epistemology. Furthermore, Danziger presented critical arguments and identified sources of persistent misunderstandings and stereotypes.

Recent Contributions

In the years following the outstanding contributions by Danziger, the English-speaking audience received relatively few publications that facilitated better understanding of Wundt’s legacy. The language barrier continues to exist and Wundt’s comprehensive treatment of epistemology and methodology, which is pertinent to general and cultural psychology, is in need of a more detailed review and evaluation. Furthermore, the continuing controversy remains about whether theories in psychology and findings from empirical research should be assessed without also critically reflecting on the fundamental epistemological and philosophical (metaphysical) presuppositions. The richness and perspectivity of Wundt’s thinking as well as his conception of psychology within a metascientific frame of knowledge is by no means exhausted. This statement is substantiated in the foregoing chapters as well as in Chapter 5 about attempts at reconstruction and Chapter 6 on the current relevance of certain principles and conclusions Wundt arrived at a century ago.

However, additional substantial contributions to the understanding and reception of Wundt’s legacy by Saulo Araujo (2012, 2013, 2016) and Wan-chi Wong (2009), two foreign authors, are also noteworthy, and are referred to in the corresponding chapters. Araujo (2012) presented a thorough investigation about why Wundt abandoned the theory of the unconscious that he initially posited (cf. Chapter 3. 5). Araujo also discussed Wundt’s *Völkerpsychologie* (Chapter 3. 6), and his book entitled *Wundt and the philosophical foundations of psychology* (2016) provides the most detailed study on Wundt’s notion of a scientific philosophy and a psychology located between the natural sciences and the mental sciences, including comments on Wundt’s system of categories and principles (Chapter 3. 7). For Wong’s work entitled (2009) *Retracing the footsteps of Wilhelm Wundt: Explorations in the disciplinary frontiers of psychology and in Völkerpsychologie*, see Chapter 3. 6.

Kim commented in *The Stanford Encyclopedia of Philosophy*: “Wundt’s conception of psychology was always controversial. At least in Germany, the struggle over the status and philosophical meaning of “consciousness” resulted, on the one hand, in the exclusion of Wundtian empiricism from philosophy departments, striving to maintain their speculative purity, and, on the other, the institutional establishment of experimental psychology as an independent discipline. ... Let us return to James’s mean remark (1887/1920) about Wundt: he has no *noeud vital*, no central idea, and so this would-be Napoleon planarian can never be “killed all at once”. Setting aside Wundt’s need to be killed at once or in bits, a fair and attentive reader will respectfully reject such criticisms. For although Wundt has many ideas – the ‘theory of actuality’, the ‘principle of psychophysical parallelism’, ‘voluntarism’, ‘creative resultants’, etc., etc. – yet they all do have a single unifying node, namely what I have here called “monistic perspectivism”. If Wundt has a big idea, it is that Being is a single flow of Becoming with many sides and many ways of being described. Consequently we, as part of this Being, have many ways of describing and explaining it. Few have as unblinkingly accepted the consequences of their starting points, or more doggedly pursued them to their various ends as Wundt.” (Kim, Internet Resource, 2016).

4.9 Hypotheses Regarding the Minor Impact of Wundt’s Work

The diagnosed break in tradition encompasses more than the gradual decline of professional interest in Wundt’s conception. At the Leipzig Institute, there was already a relatively large number of co-workers and assistants over the years, and an even greater number of doctoral students in psychology. *Break* also indicates the fact that the so-called “disciples of Wundt” scarcely dealt with the basics of his work, and eventually distanced themselves more or less clearly from essential concepts, or simply pursued their other interests. Beneath the surface of general appreciation and professional and personal respect, a remarkable distancing occurred and criticism of the foundations of Wundt’s work became evident. It is striking that these criticisms are often expressed without even sufficiently referring to the context and quoting Wundt’s viewpoints precisely, or without stating one’s own position clearly. Undoubtedly, some of Wundt’s postulates and principles were critically and even highly critically reviewed in journals from the beginning, but they were also occasionally supported and defended. Critical reflections by some of Wundt’s colleagues can also be found in his obituaries. In any case, this distancing and criticism must have been highly interesting to those who contemplated the large and famous Leipzig Institute, even if the underlying controversy and misunderstandings probably often remained obscured. The following summary relates to the field of psychology. The reception of Wundt’s system of philosophy, his logic in the narrower sense, and his theory of the natural sciences require separate studies.

Perhaps the most important reason for Wundt’s relatively minor posthumous effect lies in the high aspirations of his epistemologically founded conception of psychology as well as the difficulty of his multifaceted methodology. Most psychologists in the next generation seem to have preferred a simpler view rather than engaging with Wundt’s two reference systems, which consequently required a multimethod approach. Thus, a seemingly straightforward approach was preferred that was either oriented towards natural science or the humanities, thereby limiting the definition of psychology. How much epistemology is necessary for empirical psychology and how complicated might these considerations be?

Wundt developed a genuine and unified theory of science for psychology. In his conception, a unique epistemological and methodological perspective on empirical psychology is postulated. It demands the ability and willingness to distinguish between perspectives and reference systems and to understand that these perspectives complement each other in the sense of a perspective monism. Wundt defined the field of psychology comprehensively and interdisciplinarily and also explained that epistemological reflection and critique of psychological theories is necessary.

The central works, i.e. *Grundzüge der physiologischen Psychologie*, *Logik und Wissenschaftslehre*, and *Völkerpsychologie* comprise a total of 16 volumes, not including the *Ethik* and *System der Philosophie*. These major works are closely related to each other, but Wundt neither concisely explained the resulting structure, nor sufficiently pointed out essential content-related amendments and supplements in the other books. Furthermore, he did not explain the cross-connections didactically.

Wundt did not present his fundamental systems of categories and principles in a textbook manner together with his methodology. The work is highly demanding due to its experimental foundation and research program aimed at a developmental theory of the human mind. Unlike most other pioneers of psychology and today’s authors, Wundt explained his assumptions about mankind, his belief in the unifying strength of reason, and his striving for a uniform view of the world. His teaching on ethics connects cultural–psychological empiricism with normative principles and the idea of humanity.

Wundt did not shy away from critique or attack as evidenced by the range of controversies as described in the previous chapters. His epistemological and methodological considerations are generally more explicit than those of the majority of psychologists and thus encouraged direct criticism, as in the case of his rejection of a metaphysical substance or “soul” underlying the actual psychical processes and the resulting polemics against his “psychology without soul.”

Despite his wide scope of psychology, it was critically noted that he had less interest in differential psychology, child psychology, social psychology of dyadic interaction, and psychopathology.

Wundt's frequent perspective-taking and pointing out category mistakes, undoubtedly complicated reading. However, it should be acknowledged that his sophisticated way of looking at things could be more adequate than a simplistic, reductionist style of thinking. The potential of meta-theoretical and meta-scientific thinking has not yet been exhausted.

The persistent criticism concerning Wundt's psychology as being too close to natural science or as elementarism, and the alleged dualism might also mean that he did not succeed in formulating his demanding conception and *perspectivistic monism*, his system of categories and principles, in a didactically effective way.

Few reviewers appreciate Wundt's perspective-based style of thought, which Wundt, in turn, ascribed to Leibniz. Would a "modern" vocabulary have been more beneficial today with terms such as *perspective monism*, *reversal of perspective*, *causal-final axis*, *multimethod strategy*, *integration of psychical process components*, and *coordination of reference systems*?

Wundt declared that he did not want to be the *principal of an academic school* ("Schulhaupt"). Consequently, he suffered the fate that none of his many collaborators and doctoral students were prepared to pass down his psychology and its essential concepts in connection with his philosophical views, or at least his methodology and theory of science, not to mention adopt and further develop it. Külpe, Meumann, Münsterberg, Kirschmann, Klemm, Wirth, and even Krueger, did not want to, or could not, adequately portray Wundt's comprehensive concept of scientific psychology in their books. They excluded, for example, the multifaceted methodology, neuropsychology, and even parts of the cultural psychology as well as the system of categories and principles, the controversy about Kant's profound criticism of methods, and the relationship with ethics and the idea of humanity within cultural development. No one in this circle developed a creative continuation of Wundt's conception. The "other heritage," i.e. Wundt's cultural psychology, philosophy, and ethics, soon disappeared. None of his assistants edited an anthology, compiled a selection of essential quotations, or produced a compendium of his basic methodology and multimethod repertoire.

Some of Wundt's statements obviously lack precision. His writings contain inconsistencies, and more precise (formal) definitions could have been worked out for some essential topics. In addition, he does not make things particularly easy for his readers, as some of his important statements vary between his publications and even between their subsequent editions. In this respect, some of the aforementioned controversies have to do not only with the respective issue, but also with unclear statements by Wundt and his counterparts.

For today's German readers, Wundt's demanding, qualifying, and thus occasionally cumbersome, but also very incisive style, may discourage further reading. Wundt's terminology also allows for misunderstandings since he – from today's point of view – named some of his most important concepts in an unfortunate way. The many different formulations, e.g. with respect to the principles of psychical causality, are irritating. However, such shortcomings do not justify attributing a contradictory style of representation or a superficial tendency to Wundt in general.

Many of the reviewers show respect for Wundt's wide theoretical horizon and multifaceted knowledge, which included the natural sciences and philosophy. Other reviewers consider the abundance of content spread and structured by Wundt to be overwhelming and used descriptive terms such as *universal knowledge* or *polyhistoric*, not necessarily with a positive intent. The stereotype "an encyclopedic knowledge, but partly superficial," i.e. a not necessarily sufficient competence for so many difficult topics emerged especially in the many fields of cultural psychology.

The later widespread, false categorization of Wundt as a one-sided "natural scientist" was initially less likely to be found, at least not yet as a stereotype. Wundt's efforts to connect the individual sciences with philosophy was appreciated by several reviewers, but the epistemological control function through philosophical reflection and thus the intrinsic relationship between the two disciplines was hardly discussed or approved, in contrast to the lasting controversy about institutional dependence or independence.

Quite a few of the more recent notes on Wundt's scientific work in textbooks on general psychology and the history of psychology are flawed or totally inadequate, although depictions in earlier sources were still available (especially those by Eisler, 1902; Oesterreich, 1923/1951; Scheerer, 1989). However, these earlier sources were obviously not read and used. It is only in the more recent Wundt reception that his areas of interest are considered in their context, and that Wundt's theory of science and philosophical thoughts were included – as it was the case three generations ago.

4. 10 Summarizing Theses on the Historiography of Wundt

The reception research on Wundt's work is of special interest since he was in many ways a pioneer of psychology as a new discipline and created an immense work with a wide and interdisciplinary orientation. However, Wundt failed to become a role model for the new discipline. Many references indicate that Wundt was an internationally renowned and distinguished scientist with doctoral students and guests from many countries and with influence in the professional world and university

life, including his university speeches. His main works, despite their scope and level of aspiration, were printed in several revised editions.

Wundt's perspectivism with its categorically different reference systems, its epistemological rationale and the corresponding multimethod research strategy have *not been widely recognized* by historians of psychology. Instead, it has become clear how subjective the selection, weighing, and evaluation of scientific achievements is, and on the other hand, how little information science historians are willing to provide regarding their epistemological presuppositions, interdisciplinarity, and own scientific standards of comparison, and reflections on the necessary expertise in evaluating sophisticated strategies and research outcomes – based on experiences from their own empirical research projects.

A special issue in the reception history of Wundt's oeuvre is related to the assumed break in tradition after the turn of the century, considering that he lost a significant amount of influence and almost became an outsider. This tendency can be seen in his students as well as in the selective reception and strangely distorting comments of later textbook authors and some historians of psychology:

- (1) Wundt's conception has been inadequately received and was not continued by his circle of assistants and collaborators;
- (2) Wundt's theory of psychological processes and his corresponding definition of psychology neither corresponded to the common beliefs about the soul or spiritual being, nor was he in line with the nascent materialism and positivism in psychology;
- (3) Wundt's conception was too

The overall impression gained by reception research is summarized in a few theses, which are in line with the hypotheses formulated in the Documentation (2011): Why did the founding father almost become an outsider in the new discipline? Those hypotheses are now supplemented and partly modified due to further reading and context.

Distancing

The two or three decades of high profile, or even celebrity, in the 1880s and 1890s and still at the turn of the century, were followed by increasing disinterest in the professional world: distancing, criticism, or direct rejection of Wundt's conception of psychology. Bibliometrical analyses show that for Wundt, as for other authors, a decrease in interest was obvious after 1915. Distancing is more evident in critical comments or by the way his teachings were ignored in psychology textbooks and the books published by his Leipzig "disciples." It is probable that the main effect is because World War I and the subsequent political and economic crises in Germany, including the National Socialism regime, which altogether lasted three decades. But this is hardly a sufficient explanation for the obvious break in tradition, which appears extraordinary considering Wundt's status and eminence in the previous decades.

Stereotypes

Alongside distancing, stereotypes increasingly appeared in the secondary literature, such as "the (natural) scientist Wundt," "the philosopher Wundt," "the physiologist and elementarism psychologist," "the experimental psychologist without interest in applied psychology and social psychology," "psychology without a soul," and "psychologism." Even some of the textbook authors apparently found it difficult – even today – to grasp and convey Wundt's high aspirations for integration and his perspectivistic monism.

Armchair Psychology (History) versus Empirical Research

It is obvious that most of the evaluations and judgements about Wundt's work came from psychologists who themselves had no systematic research experience, neither in the laboratory, nor in the systematic interpretation of hundreds of sources pertaining to the diversity and common trends of cultural development. Even a PhD degree in Leipzig did not readily indicate that the student had done laboratory research under the tutelage of Wundt, i.e. a personal tutorial, since many of the doctoral dissertations had a theoretical topic. Thus, in reading the evaluations about Wundt's research in textbooks and historiography, it seems appropriate to examine the respective author's background, academic qualification and individual research experience.

Inadequate Institutional Conditions

A continuation of Wundt's specific research program in experimental psychology, including his innovative paradigms on apperception psychology and volitional psychology, was not pursued. In this respect, one should bear in mind that institutes of psychology at most of the German universities had less human and financial resources compared to Leipzig. To continue the research program in cultural psychology would have required interdisciplinary cooperation and the inclusion of modern cultures and possibly field research in cultural and social anthropology. Wundt's successor to the chair, Felix Krueger, was obviously neither sufficiently qualified in this respect, nor motivated. In Leipzig, Krueger signified the break of tradition.

Wundt's daughter Eleonore was successful at least in the care, custody, and storage of Wundt's work. Finally, in 2015, the Leipzig University Archives announced the completion of the cumbersome project to provide scans from all written sources as well as open access to Wundt's correspondence existing in Leipzig, as well as a wealth of handwritten manuscripts and excerpts with the hope of providing a basis for adequate research (Meyer, 2015; Meyer, Mädebach and Schroeger, 2016).

External Conditions

During the First World War and the subsequent political turmoil and period of economic crises, research and teaching could only be continued to a limited extent at universities, and there is no doubt that the reception of Wundt's work and books was significantly impaired. Some of Wundt's books were reprinted up until 1923, after which interest seemed to dry up, while the books of several other psychologists were published during those years and also under the rule of National Socialism. Also, in the post-war period after 1945, the conditions were highly problematic at the Leipzig University in the German Democratic Republic for economic – sometimes also ideological – reasons, despite the commitment of Eleonore Wundt and the research group of Meischner and Meischner-Metge. Then in 1980, it was possible to stimulate wider interest, especially in memory of Wundt's founding role and interdisciplinarity, at the *International Congress of Psychology*. However, this revival of interest was short-lived in the United States and in German-speaking countries, with the exception of a very few authors. During the next several decades, this momentum could not be maintained in Leipzig and could not be developed into a correspondingly active *Center for Wundt Studies*.

Such reflections may prompt intriguing questions, in particular with respect to the Wundt Centenary in 2020. What is the present state concerning the editions of Wundt's work and the actual presentation and discussion of his intellectual heritage as compared to, for example, the editions of *Collected Works*, or even *Complete Works*, of eminent philosophers, or to the activities of academic societies in the mental and natural sciences devoted to eminent scholars?

No Edition of Wundt's Collected Works

In Leipzig, there has apparently never been a major project to publish an (annotated) edition of Wundt's main works. Neither an anthology, nor a selection of basic texts or a compendium of his theory of science and his methodology have been published. It continues to astonish that no attempt has ever been made to provide an overview of his entire work. There is still no recent biography – as compared to Eisler (1902) and König (1903) – that aims to provide a comprehensive portrayal of Wundt's life *and* work.

Primary Founder of Psychology, but not a Role Model

In Germany, a Wilhelm-Wundt-Gesellschaft was founded in 1979, which has a limited number of members. However, the statutes of the organization define their general goal as the promotion and development of “basic research” in psychology. Wundt and research on Wundt are explicitly *not* included. The paradoxical use of his name raises questions and invites comparison to the attention directed at Sigmund Freud with his collected works and numerous biographies, not to mention Freud libraries and Freud organizations in Vienna, London, and Topeka, Kansas. Comparisons can also be made to Franz Brentano with the International Brentano Society, Brentano Archives, Brentano website and research, as well as William James with the William James Society, William James studies, and William James collections.

Psychological and Sociological Aspects

The transience, fading, and forgetting of original scientific contributions, and the emergence of new research orientations and currents in psychology has many reasons. Did a *saturation effect* and also a psychological *reactance phenomenon* (resistance) occur in view of the relatively long-lasting and dominant role of Wundt? Perhaps expectations are too high with respect to the continuity and systematic scientific development of psychology. In any case, new and interesting directions took root, including the mental science and phenomenological orientations of Dilthey, Jaspers, Spranger, Brentano, and Husserl, the Gestalt psychology, Freud and psychoanalysis, as well as Adler and Jung, furthermore Pavlov, and later Watson's and Skinner's behaviorism, the social-psychological turn, behavioral sciences the *decade of the brain*, the overwhelming *cognitive turn*, etc. Some fields found considerably more interest than before, including the developmental psychology of children and adolescents, personality and assessment, the expansion of applied psychology into the professional world, school, industry, and clinic, as well as psychotherapy. The dynamic of interests is particularly conspicuous in psychology, and many attempts at psychological and sociological interpretation of such trends have been made, such as the *Life cycle of psychological ideas* (Dalton and Evans, 2004; see also Fahrenberg, 2015a, pp. 611-614). Such hypotheses remain speculative since reliable data does not exist. Bibliometrically recorded trends in references to Wundt may be interpreted as evidence of a break in tradition, but the decline might only be the typical progression that is also seen with other psychologists (except Sigmund Freud).

Research into the attitudes of professors, students, and practitioners based on representative samples is necessary as are multimethod bibliometric studies, e.g. the relative frequency of quotations by name and by theoretical *concept* and *method* in journals and textbooks.

General Criticism of Historiography in Psychology

The extremely heterogeneous assessment of Wundt's conception of psychology suggests a critical view on historiography in psychology and the theoretical horizon of general textbooks for psychology students. In any case, at least some suitable introductions to Wundt's ideas were available to German textbook authors a century ago. There are a number of recent German authors who, without sufficient evidence, judge Wundt's views in a superficial and distorted way. This raises considerable doubts as to whether Wundt was read thoroughly in the original, or whether only passages from *secondary* literature were passed on *tertiarily*. The serious misunderstandings, one-sidedness, and stereotypical assessments in the existing literature could have been corrected on the basis of those authors' own reading, and in the simplest case by providing representative literal quotations or by citing competently written sources (specifically by Eisler and Oesterreich, a century ago, and also by Scheerer). Grossly inadequate presentations have shaped the current and long-term memory of Wundt's work. However, if Anglo-American sources, e.g. Hall's distorted presentation of Wundt or the misconceptions by James, Titchener, and Boring, are cited – apparently approvingly – by German-speaking authors, then it is an embarrassment.

Internationalizing the History of Psychology is the title of a book edited by Brock (2006). His introduction addresses the *differences between U.S. history and world history* and is expressed in a highly critical and ironic way as a set of “rules of inclusion/exclusion in the history of psychology”:

Rule # 1: If your work did not have a major impact on American psychology, however influential it might have been elsewhere, it does not count.

Rule # 2: If your work had a major impact on American psychology, even though its influence was limited or non-existent elsewhere, it is an important part of the history of psychology.

Rule # 3: Asia, Africa, Latin America, and Oceania do not exist.” (pp. 3-4).

“Many American psychologists assume that behaviorism was equally influential throughout the world and thus speak of a ‘cognitive revolution’ in the 1960s. This will only work if one’s horizons extend no further than the United States because behaviorism had a very limited impact overseas. European psychologists like Piaget, Vygotsky, Bartlett, and the Gestalt psychologists did not abandon the study of ‘mind’. This difference explains why the work of Piaget and Vygotsky from the 1920s and 1930s was belatedly ‘discovered’ by American psychologists in the 1960s after the influence of behaviorism began to wane. ... All this is leading in one direction: the content of these [American] textbooks is not the history of psychology at all. It is the history of American psychology. European psychologists are included if, and only if, they had influence in the United States. This is why there is a preponderance of European figures, like Wundt and Freud, in the early part of the history of psychology when American psychology was relatively undeveloped. It is impossible to write a history of American psychology without reference to them. This is not the case once American psychology has become established. The European psychologists who are included from later years are mainly refugees who came to the United States. These include psychoanalytic theorists, like Fromm, Horney, and Erikson, and the Gestalt psychologists.” (2006, p. 4-5).

The contributions to this book contain numerous references to influences between the development of psychology in European countries, Asia, South America, Africa, and the United States. There is also some statistical information on the number of *National Psychological Associations* and *IAAP Congress presentations* from the various geographical regions. However, there is no contribution describing the difficulties of an adequate translation of important texts or an exemplary bibliographic investigation of the extent to which classics of psychology, such as Wundt's *Grundzüge der physiologischen Psychologie* or his “Völkerpsychologie” have been translated into other languages.

From the standpoint of systematic reception research, it appears to be necessary to inquire into the detrimental outcomes of superficial, one-sided, or even falsifying, historiography in psychology. There is already a critical discussion about the methods of historiography in psychology, which calls for a multimethod approach in the future (cf. Fahrenberg, 2015; Pawlik, and d'Ydewalle, 2006; Thomae, 1977). This also recalls the request of the English science historian Young (1966) who said in reference to classics in historiography of psychology that these authors should accept that no less rigorous standards should apply to this task than to experimental psychology.

In the history of psychology, the discussion of single facets of Wundt's writings and details of his biography have prevailed instead of explicit representations of the profound theoretical structure of the entire work in its interdisciplinary context and explanations of basic theoretical constructs like apperception, or of the system of categories and principles, and the multimethod research strategies, or at least investigations of the basic controversies and motives of philosophical objections and ideological polemics. Only in the newer reception were larger parts of Wundt's intellectual heritage examined in context, and the theory of science and the philosophy of Wundt were included (Araujo, 2016; Danziger, 1990, 2001; De Kock, 2018; Fahrenberg, 2011, 2015a, 2016; Jüttemann, 2006, 2007b; Kim, 2016; Scheerer, 1989; Ungerer, 2016)]]

Another aspect, scarcely ever discussed, is the necessary *scholarship*. When Young (1966) points out the necessary standards, we need to inquire further. Wundt's work in particular requires a broad scientific interest ranging from neuropsychology and animal psychology to epistemology and ethics. The guiding epistemic principles and the methods of investigation are fundamental. How can Wundt's theories and empirical research be adequately evaluated if this attempt is not based on one's own competence in experimental research in the laboratory and acquaintance with qualitative research methodology?

4. 11 Tasks for Research

Empirical psychology is the largest and most important section of Wundt's oeuvre, but his work also extends into neurophysiology, ethics, logic, and theory of science, i. e. the natural and the mental sciences (humanities). Consequently, a comprehensive reception research and valid interpretations are best carried out in an interdisciplinary manner. However, there is not yet an overview of such sources outside psychology, nor documentation of foreign-language reviews or comments on Wundt's oeuvre.

Considerable difficulties might arise if specific statements from Wundt are not understood in the context of his other publications. Most of his books include an index of persons and terms, but there is no overall index for his roughly 25 most important books, such as is the case in the *Freud Konkordanz* (1995), in order to improve the accessibility of essential cross-references. However, digital copies of the main publications are required at first for this purpose, instead of just page scans.

The initiative to preserve Wilhelm Wundt's final residence in Grossbothen near Leipzig (Jüttemann, 2014b) has been followed by considerations to establish a *Wilhelm Wundt Foundation* in Grossbothen. The *Memorandum* (Fahrenberg, 2018b) contains suggestions about relevant necessary steps and essential tasks.

The potential tasks of the research center can be divided into four areas: documentation, edition, reception research, and reconstruction of central concepts in Wundt's psychology and philosophy in modern scientific terminology. However, establishing this center would depend on funding to finance not only the necessary equipment, but also one or two employees and ongoing scholarship recipients with the status of "Psychologist-in-Residence. *Wilhelm Wundt Foundation* in Grossbothen." The Foundation, as proposed in the *Memorandum*, could aim at:

- Preserving and comprehensively documenting the *entire work* of Wilhelm Wundt for greater availability, including digital and open access.
- Providing *annotated editions* of the important books and essays, and eventually an *anthology* of essential quotations and a concise presentation of the basic principles in his epistemology and methodology.
- Investigating the *present reception and international impact*.
- Reconstructing *theoretical insights and methodological principles* in such a way that the current significance of this heritage is more evident and invites *interdisciplinary research* in these fields.

5 Attempts at Reconstruction

5.1 Strategies of Reconstruction and Previous Attempts at Reconstruction

Here, reconstruction refers to providing a *systematic representation* of central theoretical propositions of Wundt's conception in modern terminology. The *system of principles* and the *theory of apperception* were selected because they connect *general* psychology and *cultural* psychology and are fundamental to his work as a whole.

Wundt's epistemology and methodology are summarized here by the system of principles with a distinction between superordinate *postulates* and *principles*, and between *strategies* and *specific methods*. Without this *system of principles*, Wundt's *conceptual definition of empirical psychology* cannot be understood. He repeatedly explained the tasks and aspirations of psychology within the general system of sciences; however, its systematics were not coherently expounded – except for the presentation contained in *Logik* in a section that is included in the volume on *Geisteswissenschaften* (mental sciences). It contains a sequence of principles and explanations, which are often closely related to each other, but Wundt did not provide them with a structure by clearly distinguishing between basic *postulates* and subordinate *principles*, or by highlighting *general categories*, relations, and meta-relations. The edition of *Logik* referred to here is the last edition, vol. 3, from 1921. The specific psychological methods were presented partly in the *Grundzüge*, partly in *Logik*, vol. 3, and in some of his *Essays*.

Apperception theory provides the common foundation of general psychology and cultural psychology. Therefore, apperception is the central theoretical construct in Wundt's work. In addition, his theory of will (motivation), the psychophysiological theory of emotion, and the essential motives assumed in cultural–psychological development are also of primary interest. Wundt's *theory of language* and *language development* (*Völkerpsychologie*, vol. 1 and 2) is also a prominent field and perhaps best suited to depicting his highly differentiated formation of concepts and his theoretical intentions, along with the combination of experimental and descriptive methods. However, a well-founded reconstruction would require appropriate professional competence in this field. Wundt's *theory of apperception* is mainly contained in the last edition of the *Grundzüge* (1908-1911), but several volumes of *Völkerpsychologie* (1910-1920) contributed instructive explanations and examples, especially in the two volumes of *Language*.

Reconstructions are necessary in order to convert at least parts of his work, which was created about 100 to 150 years ago, into a more accessible version for today's reader with modern terminology. A reconstruction of this kind differs from a conventional description or review in that it organizes the essential components in a structured manner solely from the – presumed – perspective of Wundt while also supplementing it with other parts of his work. When a large work is summarized in this way and then translated, it inevitably becomes a modern interpretation. The long quotations from Wundt's work in the previous chapters provide the primary formulation of his thoughts, and the references and comments in Chapter 4 are mostly kept in the technical language used during Wundt's time.

On the one hand, the method used here to update important concepts in Wundt's work should be distinguished from structuralist or metatheoretical reconstructions and, on the other hand, also from simple descriptions or reviews with selective comments.

Structuralist Reconstruction, Meta-Science Analyses and Other Reconstructions

According to Westmeyer (1989, 1992), the structuralist conception requires a formal reconstruction of the often chaotically divergent psychological theories and has implications for methodology. The task of a serious science of psychology is to clarify the existing chaotic set (conglomerate) of theories, and to work out the fundamental law, theoretical elements, and most important intended applications. In *Theoretical psychology. Sketch of an interdisciplinary research program*, Westmeyer (1991) defined ten steps to build theoretical psychology as an independent sub-discipline “with precise methodology and binding results.” Among the ten goals (1991, p. 484), the most important are likely:

1. Identifying and categorizing the basic concepts of a psychological theory.
2. Introducing derived terms through appropriate definitions.
3. Identifying and precisely formulating the basic assumptions of a theory.
4. Deriving further assumptions of the theory from these basic assumptions.
5. Differentiating between so-called theoretical and non-theoretical terms.
6. Characterizing the scope of the theory.

Westmeyer's overview entitled *The structuralist program in psychology: Foundations and applications* (1992) identified 37 such structuralist reconstructions and constructions of psychological theories, mainly in cognitive psychology, including, among others, Westermann's reconstruction of Festinger's dissonance theory, Westmeyer's reconstruction of a dyadic interaction with reference to Skinner's basic assumptions, as well as Anderson's cognitive architecture, attribution theories, and action theories, even Freud's theory of neurosis. Westmeyer's program contrasts with his later resigned attitude towards recent developments in the theory of science (2004b).

In this context, Reizenzein (1992) attempts a structural reconstruction of Wundt's theory of emotion in an article entitled *A structural reconstruction of Wundt's three-dimensional theory of emotion*; however, it mainly refers to the *Grundriss* (1896a) and is only supplemented by a few references to the *Grundzüge* (1908-1911). "Wundt's theory is in some respects more sophisticated than are its contemporary descendants, and ... something can therefore still be gained from a reconsideration of Wundt's ideas" (p. 142). "A structural reconstruction of Wilhelm Wundt's three-dimensional theory of emotion and a sketch of its theoretical environment are presented. Wundt's theory, a quantitative theory of the structure of emotional experience, is reconstructed as a small theory-net consisting of the basic theory-element TE(WUNDT) and several specializations. The main substantive axiom of TE(WUNDT) postulates that each emotional quality, unless itself basic, results from the fusion of a characteristic 'mixture' of six basic forms of feeling: Pleasure, displeasure, excitement, inhibition (tranquilization), tension, and relaxation. A second axiom holds that these basic feeling qualities are organized into three 'bipolar' dimensions; and the third axiom claims that the basic emotions experienced with regard to complex objects are a fusion of the corresponding basic feelings directed at the components of the complex objects. ... It is suggested that only one concept of the theory, the quality function (which assigns characteristic proportions of basic feelings to the nonbasic emotions), is T-theoretical. A link from a theory of emotion measurement to TE(WUNDT) is sketched, and the intended applications of the theory are briefly discussed" (p. 141). "Wundt's assumption that each of the six basic forms of feeling represents a class comprising a multitude of distinct feeling qualities was abandoned." (p. 150).

However, Reizenzein's starting point of reconstruction differed considerably from the original conception by separating the theory of feelings from Wundt's essential theory of affect (*Grundzüge*, 1910) and from the framework of apperception theory. In addition, the psychophysiological aspects, which are characteristic for Wundt's theory, were omitted, and neither the distinction between feelings and compound feelings, nor the volitional aspects were considered. Nevertheless, interesting suggestions are made that could stimulate further attempts at clarification and empirical research.

Meta-Scientific Reconstructions

The meta-scientific reconstruction of the primary psychological theories of a particular domain is even more challenging than the structuralist reconstructions of individual theories. A meta-theory (super theory) summarizes a defined set of specific, but heterogeneous, theories after they have been made suitable for comparison via axiomatizations. The comparative and meta-theoretic examination of the *Theories of Motivation* by the Danish psychologist Madsen (1968) stands out because he undertook a comprehensive analysis of psychological theories in this field. Preliminary work required the definition of the conceptual framework of metatheoretic psychology and also the syntax and semantics of theories. The *Systematological Taxonomy* includes the definition of theory, axiomatization, symbolization, and formalization as well as semantic function, truth of statements, protocol sets, scientific hypotheses, statistical concepts, and models. The *frame of reference* has three levels: the data level, theory level, and philosophical or meta-level pertaining to assumptions about human nature, positions regarding the mind-body problem, and freedom of will. In addition, Madsen distinguished between epistemological theses, i.e. empiricism, rationalism, realism, idealism, pragmatism, as well as between metatheoretical theses, i.e. nomothetical ideal, hermeneutic ideal, and idiographic ideal, and also methodological theses, i.e. research methods and data type.

The main part deals with ten motivational theories, particularly behavioral-biologically oriented theories, and, furthermore, with Allport, Murray, Lewin, and McClelland. With respect to Wundt, Madsen only used the first edition of the *Grundzüge* (1874) as the representative source, and "Wundt's theory" in some respects is classified in parallel to "James's theory" (1890). Madsen conveyed some simple terms from Wundt's psychology, but the labeling of Wundt's alleged meta-theses contained gross misunderstandings, e.g. that Wundt, according to Madsen, conceived of man "only from within," and that he assumed a consistent psychophysical interaction and was a determinist. Moreover, Madsen did not grasp the core of Wundt's apperception theory or neuropsychology, and least of all his epistemology and methodology. Madsen referred to Wundt and James as "the two paradigm-creators" and credited them with the same meta-model.

Key Terms and Operational Definitions

The reconstruction of a psychological theory and subsequent metatheoretic approaches first requires the explication of the central terms. This task was tackled by an international group of authors (Pawlik and d'Ydewalle, 2006) by examining a set of *key terms*. At first, this was done descriptively, but could be extended to include methodological standards, adequate operationalizations, standardized paradigms, and valid interpretations. Many of the *key terms* imply aspects of *key controversies*

in epistemology and methodology, and thus, would probably resist attempts at integration to build a coherent conception or unified meta-theory.

The critical issues in operationalization are likely to become more apparent in testing of distinct hypotheses and in attempts at independent replication of experiments. Thus, a multi-year research program with respect to the *emotionality* personality dimension, a theoretical construct elaborated by Eysenck, showed that (except for the questionnaire scale N) the existing definitions of essential paradigms and parametrization were not sufficiently precise and standardized for cross-laboratory research and valid replication (Fahrenberg und Myrtek, 2005; Fahrenberg, Myrtek, Pawlik und Perrez, 2007; Myrtek, 2004). If a theoretical conception is rejected because of the *empirical falsification* of the derived statements, the question arises whether valid operational definitions of the central construct and sub-constructs had been accomplished or whether the theory itself should be fundamentally revised.

5.2 Previous Approaches to Reconstruction of Wundt's Concepts

The year 1979, the centenary of the laboratory foundation, is considered here as the beginning of the newer reception of Wundt's complete work; however, even since then only a few publications have been published that could be considered attempts at reconstruction of key concepts of Wundt's work, or at least as attempts that approach this goal.

Scheerer (1980) referring to Wundt's conception of *memory research* provided a significant example of how a section of Wundt's research can be systematically presented. Wundt certainly dealt with the psychological investigation of memory, even if he did not use that term. He distinguished between four issues: the theory of dispositions, the concept of representation of memory, the revised doctrine of the associations, and the taxonomy of cognition and recognition. Wundt rejected concepts of "storage" in the sense of retention, but he was interested in the neurophysiological side, as long as it did not assume fixed cortical localization of memory traces. Scheerer found some of Wundt's perspectives interesting for present cognitive science and critically asked what Wundt would think about the recent concepts in this field and which of them he might contradict.

Danziger (1979a, 1979b, 1983, 1990, 2001b) interpreted some of Wundt's basic ideas and contributed to the correct understanding and reconstruction of them. Araujo (2012, 2016) reviewed and reconstructed the meaning of the term "unconscious conclusion" used by Wundt until 1874 and, later, Araujo reviewed and recovered the philosophical foundations of Wundt's work for the first time in detail (cf. Chapter 3. 9. 3). In the volume on Wundt's heritage, edited by Jüttemann (2006), there are several contributions that present suggestions and considerations on the way to approach reconstructions. Some of these were already highlighted in the previous chapters, for example: Graumann: *Die Verbindung und Wechselwirkung der Individuen im Gemeinschaftsleben* (The connection and interaction of individuals in community life, pp. 52-68); Janich: *Die Heterogenie der Zwecke als Problem der Psychologie* (The heterogeny of purposes as a problem in psychology," pp. 88-101); Allesch: *Das Forschungsfeld „Mythus“ bei Wilhelm Wundt* (Wilhelm Wundt's research on the topic of "Myth," pp. 156-165); Kühne: *Das Forschungsfeld „Sitte“ bei Wilhelm Wundt* (Wilhelm Wundt's research on the topic of "Customs," pp. 167-178); Schulz: *Ansätze zu einer historisch orientierten Psychologie der Gesellschaft bei Wundt* (Wundt's approaches to a historically oriented psychology of society, pp. 179-190); van Belzen: *Die kulturpsychologische Transformation der Wundt'schen Religionspsychologie* (The cultural-psychological transformation of Wundt's psychology of religion, pp. 191-202); Loh: *Wilhelm Wundts Ethik und ihre Relevanz* (Wilhelm Wundt's ethics and its relevance, pp. 218-231). This book attempts to present Wundt's conceptions, which includes the theory of science advocated by Wundt, the influence of Leibniz on Wundt's psychology and philosophy, the relationships between Wundt's general psychology and cultural psychology, and Wundt's positions in major controversies of theoretical psychology (Fahrenberg, 2012, 2013a, 2015a, 2017).

In the next sections, which supplement the introductory notes in Chapter 3. 1, the intention is to provide structured summaries of the preceding chapters with respect to the explicit definition of psychology, Wundt's postulates, principles, and methods, as well as Wundt's theory of apperception. Extended literal quotes from Wundt's writings are marked, but in most cases exact references are not provided here (cf. the respective chapters).

5.3 Defining Psychology

A definition of "psychology" based on Wundt's work is pursued here in order to understand his general conception. Instead of definitions that are customary and that only enumerate the main fields of psychology or merely provide nominal definitions, an explicit definition is sought here. A concise demarcation of psychology from neighboring disciplines would be impossible

based on only the main methods or range of applied fields. At most, a categorical distinction based on the relevant categories can be expected to accomplish this goal.

Psychology is a science with the aim of giving a systematic, categorically, theoretically and methodically sound description of (1) psychical (conscious) processes, (2) their psychical connections, (3) their psychophysical foundations, and (4) mental processes, achievements, and products in the cultural community.

Theory and research on basic issues in psychology depend on philosophical-epistemological presuppositions and, therefore, psychology as a discipline should maintain its relationship to philosophy in order to enhance epistemological reflection and critical discussion of individual positions, especially in light of the unsolved and persistent controversies in theoretical psychology. *Practical* applications of psychological findings (applied psychology) require thorough scientific research.

The distinction made by Wundt between “individual psychology” and “cultural psychology” has primarily methodological, and not anthropological nor metaphysical reasons. In the whole of life experience, as well as in epistemology, the conception of the self-conscious individual is intrinsically linked to the experience of and interaction with parents and family, significant others, groups, socio-cultural communities and intellectual tradition, which in turn also depends on material and physical conditions. “We know man only as a social being ...” (1886, p. 389). Other **human** beings are generally credited with the existence of higher forms of representation of their experiences and a corresponding self-awareness based on observation, mimic, gestural and linguistic communication, and empathy. This assumption also applies to other primates and, generally, to more highly developed species, whereby the formation of developmental stages of consciousness can hardly be assessed due to the lack of adequate testing possibilities. There is an ontological continuum of biological evolution with the gradual formation of elementary reflex activity and then central nervous representation, including basic vital functions, exteroception and interoception, autonomic and motor reflex activity, motility and motor skills, instinctual behavior, and non-verbal communication through facial expression, gesture, vocal articulation, and language.

Individual psychical processes can be empirically investigated largely on their own, but theoretical conceptions must consider the formative influence of education and the community, the interaction with the intellectual (cultural) tradition, and the material environment. Conscious processes and central nervous processes constitute a uniform psychophysical process that can be described scientifically in two complementary reference systems in a *coordinated* manner.

Consciousness does not mean an entity or structure, but rather the process of connecting the entirety of current, inner, and outer experience without metaphysical postulates about a transcendent soul principle. Sensory impressions as well as memories, feelings, and acts of will (motives) are taken into account. Empirical studies require conceptual abstractions, analyses, and methodological distinctions, but these are always only aspects of the unified, integrated psychical process. A vast majority of the overall neurophysiological activity is unnoticed or not at all capable of being conscious. This applies not only to the functions of the peripheral nervous system, but also to a large proportion of central nervous system processing, e.g. the autonomic nervous system controlling homeostasis and activation, the motor and sensory systems, as well as automatic inferences about spatial orientation. There are no reliable psychological methods for the examination of unconscious processes.

While psychological analysis of conscious experiences (representations) has priority, the observation and measurement of somatic and neurophysiological processes might serve as an important auxiliary method. In sensory psychology, psychophysiology, and neuropsychology, the research questions should be primarily based on the psychological concepts of psychology, but also with a view towards *correlated concepts* in physiological research. Instead of the general and sweeping term “behavior,” appropriate distinctions should be made, such as between elementary reflex and instinctual activity, expressive movements, speaking, and voluntary acts.

The term “behavioral science” did not exist during Wundt’s time. The actions and “behavior” of human beings, including their appearance, expressive behavior, movements, and language, were, depending on the point of view, part of human physiology and human biology, or part of the “Erfahrungseelenkunde”, the traditional German term preceding “empirical psychology.” The phenomena, which are basically uncoupled from conscious experience and only externally and “positively” analyzed, would be regarded as topics in physiology, for example in the chapters of Wundt’s *Lehrbuch der Physiologie des Menschen* (1865) on the nervous system, on skeletal movements, or the voice. A multitude of behavioral and physiological variables have already been observed or measured in the Leipzig laboratory. For Wundt, it would have been an essential misunderstanding to define psychology as a behavioral science in the sense of the American behaviorism. To develop this methodological approach one-sidedly would have led to a *behavioral physiology* and not to general psychology and cultural psychology.

Animal psychology is a border region to biology and is part of comprehensive developmental psychology. Thus, the study of communication between higher species can contribute to the explanation of the emergence of human language and ways of thinking.

Definition of Psychology

Wundt (1920c, pp. 17-19) approached his definition of psychology with epistemological considerations and with frequent side references to the goals and methods of the natural sciences. He summarized his reflections in three sentences, which are quoted again:

- (1) Inner or psychological experience is not a special sphere of experience alongside other spheres but is immediate experience in its totality.
- (2) This immediate experience is not a stationary content, but a relationship between events. It is not made up of objects, but of processes, namely common human experiences and their inherent interrelations.
- (3) Each of these processes has, on the one hand, an objective content and, on the other hand, is a subjective process. In this way, it includes the general conditions of all knowledge and all practical human activities.

These three provisions correspond to a *threefold position* of psychology in relationship to other sciences:

- (1) As the science of immediate experience, it is a complementary empirical science to the *natural sciences*, which, as a result of abstraction from the subject, deal only with the objective, *mediated* contents of experience. Any particular fact can, strictly speaking, be understood in its full significance only after it has been successfully subjected to the analysis of both natural science and psychology. In this sense then, physics and physiology are auxiliary to psychology, and the latter is, in turn, supplementary to the research on nature.
- (2) As the science of universal forms of immediate human experience and their laws of connection, it is the *foundation of the mental sciences* since the content of the mental sciences exists everywhere in the actions resulting from immediate human experiences and their effect. Insofar as psychology investigates the manifestations and laws of these actions, it is itself the most general mental science and at the same time the basis of all individual sciences such as philology, history, economics, law, etc.
- (3) Since psychology considers the *two fundamental* – subjective and objective – conditions underlying theoretical and epistemic reflection as well as practical actions in equal measure, and seeks to determine their interrelation, it is, among all empirical disciplines, the one whose results first assist in examining the general problems of *epistemology* and *ethics*, the two fundamental domains of *philosophy*. Psychology is *complementary* to natural science, and likewise is *fundamental* with respect to mental sciences, and it is therefore the *preparatory empirical science* of philosophy.” (partly adopted transl. by Charles Hubbard Judd, *Outlines of psychology*, pp.13-14).

Psychology is a mental, not a natural science

According to Wundt, empirical psychology is one of the *basic* disciplines within the mental sciences (humanities), while philology is considered their *specific* discipline. Wundt emphasized the epistemological and methodological distinctiveness of psychology and elaborated the specific categories that are essential to understanding and adequate reasoning in scientific psychology. Three interdependent categories constitute the core of his system, which applies to individual psychology as well as cultural development, and basically all humanities. This system comprises the thinking and willing *subject* and his or her *motivated (intentional) action* according to *purposes* and *values*. Instead of general laws, psychological research can only determine law-like generalizations that allow for exceptions and singularities. In contrast, physiology and the natural sciences are to be characterized by abstracting from the subject and values, formulating general laws, e.g. the law of energy conservation, and deducing scientific predications from causal explanations.

Physiology and the natural sciences, on the other hand, pursue abstraction from the subject that is free from any value judgement and based on a strict (deterministic) causation, the law of the *conservation of energy*, the formulation of general laws, and the prediction of effects. Psychology is neither “a natural science by task and content, nor is it an integral part of philosophy itself, but rather belongs to the empirical sciences just like physics or history.”

Psychology Constitutes the Basis of all Mental Sciences (Humanities)

Psychology is the *general* basic discipline of all the humanities and psychological analysis and abstraction guide the comparative method. As a basic science, psychology can elucidate how these disciplines have evolved “because the content of the mental sciences exists everywhere in the actions resulting from immediate human experiences and their effect. Insofar as psychology is responsible for investigating the manifestations and laws of these actions, it is itself the most general mental science and, at the same time, the basis of all the individual sciences, such as philology, history, economics, law, etc.” (1920c, p. 18).

Psychology has a Unique Position in the Scientific Landscape

From the perspective of *categorical analysis*, psychology is related to the humanities and the social sciences, i.e. linguistics, history sciences, sociology, etc. On the other hand, the primary psychophysical unity of man exists, and thus psychology also

requires physiological concepts and methods in order to be able to assess psychophysical processes, especially in sensory psychophysics, psychophysiology, and neuropsychology. The demarcation of psychology from related disciplines is less important today and hardly needs to play a role in research and professional practice. However, if epistemological and philosophical reflection is insufficient, category mistakes and inadequate methodology might occur. Because of its independence within the mental, social, and natural sciences, psychology must contend with additional epistemological and methodological issues that require joint critical reflection on existing controversies in theoretical psychology and methodology. Insofar as psychology is also an applied human science, general ethical questions and questions related to professional ethics will eventually arise.

Empirical Psychology

During Wundt's time, the definition of psychology as an empirical science using experimental and descriptive methods did not conform to prevailing views: There were philosophical controversies regarding rational and empirical psychology, the metaphysical (spiritual) foundation, postulates relating to the subject–object and mind–body problems, and Herbart's derivation of basic psychological concepts from pure thought. There had been single approaches to empirical, descriptive and, in some instances, even experimentally oriented psychology; however, it was Fechner's psychophysics, which followed Weber, that ushered in a *systematic* beginning and led to a more extensive experimental psychology, the scope of which was so unexpected by Fechner. The frame of the philosophical tradition and its controversies and contingencies can be seen in Wundt's *Vorlesungen* (1863), the introduction to the *Grundzüge* (1874), and in his partly revised definition of the concept of experience and the concept of unconscious processes. The relationship between inner experience, external experience, and the objective world remained an undiminished epistemological issue. In this context, Wundt's conception of psychology as an empirical science developed. Wundt's *critical realism* is to be understood as an intermediary position in this long tradition of ideas.

Psychology is General Psychology and Cultural Psychology

General psychology is based on investigating the individual's conscious processes that are accessible to experimental and descriptive methods and was therefore denoted as *individual* psychology by Wundt. Conversely, *cultural* psychology focuses on general laws or law-like principles about mental development. The field of higher mental processes includes the development of thought, language, artistic imagination, mythology and religion, morality and law, society and systems of government, the relationship of the individual to the community, the mental environment, and the origin of the intellectual works of a community. "Now even general psychology cannot completely ignore the fact that the consciousness of the individual is under the influence of the mental environment. Traditional ideas, language and the forms of thought contained in it, as well as the profound effect of education, are preconditions of all subjective experience. These conditions imply that numerous facts concerning individual psychology only become accessible to our full understanding through *Völkerpsychologie*" (*Völkerpsychologie*, 1900, 1, p. 1). General psychological laws (or law-like principles) and regularities in the development of the human mind are the most common goals of psychology. The *Völkerpsychologie* deals with "human beings in all relationships that go beyond the boundaries of the single being and that refer back to mental interaction as their general condition." (1900, 1, pp. 1-2, 2nd ed. 1911, 1, p. 1).

Personality, Self, Ego, Actor

Personality is the "unity of feeling, thinking, and wanting, in which the will appears again as the bearer of all other elements." Personality refers to a "self-conscious being acting with a uniform will and capable of making decisions" and, in the ethical sense, it includes "the freedom and responsibility of the will." The development of the individual human personality belongs to the biological continuum, but at the same time it is "the simplest form of historical development." For Wundt, *Self* is no more than "our awareness of the connectedness of our experiences," and the *Ego* is merely "a sense of the connection of all individual psychical experiences" in the process of consciousness. It is "a pure fiction" to transform the acting individual himself "into a *constant subject* who confronts all influences in an invariant manner, or to postulate the notion of an intrinsic actor as the dominant cause of all individual psychical events."

Criticism of Wundt's conception of psychology pointed to the voluntarist tendency and the voluntarism of Wundt's philosophy, as opposed to the intellectualistic orientation of Herbart and other contemporary authors. Wundt's general theory of motivation comprised an elementary biological pattern as well as purposeful actions. Thus, it includes biological evolution and cultural development as a creative performance of many intellectual and volitional activities. Both aspects of human development are evident in Wundt's work, including the theory of mental development and assumptions about developmental dynamism.

Scientific Standards in Psychological Science

Someone who has conducted research in neurophysiology, worked as assistant to Helmholtz, served as an instructor in experimental physiology, and who published textbooks on physiology and medical physics, will have *distinct standards of research* compared to an academic qualification limited to philosophy. As a physician, Wundt had clinical experience – although not for long – and he was presumably aware of the difference between *theory* and *practice* in medicine, as well as the premature application of laboratory findings without having a sufficient basis and confirmation through empirical research. There is no doubt that Wundt had concise standards of his own about *empirical science* and about appropriate methods regarding particular tasks. The *practical application* of findings from psychological research requires a reliable basis in this field of research.

Wundt's academic training and his level of aspiration in science are obvious. If scientific psychology is to draw general conclusions, the results of a study must be confirmed through replication. Therefore, the conditions of self-observation must be standardized in experiments and measured to the greatest extent possible. The "way of speaking of ordinary people" must be replaced by scientific psychological concepts. Wundt's attitude is perhaps best seen in his comparison of the method of naïve introspection with trained self-observation under experimentally varied conditions, or when he points out the influence of uncritical "vulgar psychology" on psychological interpretations. As prerequisites to establishing laws, he sees the necessity to introduce intrasubjective and intersubjective controls to the extent possible, as opposed to naïve introspection, personal life experience, and popular psychology – even if today's terms of validity and reliability, operationalized hypothesis, and hypothesis testing did not yet exist. Wundt made a point of familiarizing doctoral students with laboratory methodology in order to maintain standards and encourage improvements.

5.4 Wundt's Postulates, Principles, and Methods

Wundt's general *system of principles* is divided here into general *postulates* and subordinate *principles*. *Postulates* are fundamental (absolute) prerequisites that are indispensable in Wundt's conception of psychology. Since these postulates relate to each other in epistemological terms, the abandonment of one of these postulates would cause the loss of an essential part or even the entire foundation of his conception of psychology. *Principles* are basic rules of methodology, i.e. determinations of what matters. The principles, just like general concepts and theoretical explications in empirical psychology, may be developed based on further evidence, but without compromising the conception as a whole. The *methodology* in psychology follows from these general postulates and principles. Epistemological postulates and principles bring about methodological consequences and determine the further development of theoretical constructs and selection of suitable methods. An empirical *method* is a procedure and operational definition for a theoretical construct and is only suitable if it is in line with the postulates and principles. Here, the most important postulates and principles from the previous chapters are systematically summarized.

Postulates

Psychophysical Unity

Psychical processes and central nervous system processes are parallel, i.e. contain two perspectives. A psychical process should be described as a temporal sequence, and psychological research is directed at explaining *psychical connections*, the characteristic time course ("Prozessgestalt"), and modes of integration. Psychical processes are *not* brain "functions," if function is understood as a complete, categorical, and numerical equivalent (translation, assignment), as with two mathematical functions.

Psychical Processes

The metaphysical assumption of a *spiritual being* (an immortal soul) or a particular *mental structure* is not necessary in empirical psychology. The category *actuality* (or process) is sufficient, making the category *substance* unnecessary. If *soul* is only an expression of the entire experience in its constant flow and immediate reality of consciousness, this postulate has direct consequences for the concept of man and the foundation of ethics, as there is no ultimate explanation grounded in an Absolute, in God, or any other system of transcendent belief.

The postulate of *actuality* has far-reaching theoretical consequences for the definition of psychology since the psychical connections of consciousness, i.e. the actively organizing processes are no longer explained ontologically by an underlying "carrier." Psychical (mental) processes are tied to the brain, but contrary to the materialistic belief, they are not a property of physiological CNS activity, but rather processes of experience that are added to biological nature without implying a metaphysical postulate (mind, soul). Categorical characteristics evident in the variable process of consciousness are *subjective* experience, *values*, *purposes*, and voluntary action.

Since assumptions about an underlying metaphysical substrate have been rejected, the specific psychological task is instead to investigate the *actual* relations (psychical connections) in psychical processing and to conceive of a dynamic principle of psychical (conscious) activity and development. Psychologically, the connections (syntheses) extend from the mere sensory impression to the control of attention and (self-)conscious apperception of sensory impressions, including their integration with feelings and motives (volitional activity), up to the complex processes of collectively accomplished cultural and ethical achievements. Wundt's research program seems to be directed by the guiding principle of establishing a *developmental psychological theory of mind* based on results obtained from experimental and cultural psychology.

It is necessary to elucidate the principles and laws of psychical connections, i.e. to develop an empirically based process theory. The apperceptive connections and voluntary orientations – as in active attention – are at the core of the higher psychical processes. Not single elements, but compounds with their connections in apperceptive and volitional processes, i.e. the *integration* of psychical processes, are the central focus of general psychology as well as in cultural development.

Ontological Continuum of Evolution

Psychical processes emerged in parallel with the more highly organized and central nervous functions of sensory reception, reactivity, regulation, instinct, and drive actions. In the evolving central nervous system, the representation of “inner and outer experience” assumes a continuum from elementary preforms to sophisticated human self-consciousness, as well as emergent forms of communication, language, and social organization. According to Wundt, mind is not something that is external and dualistically opposed to nature. Rather, mental processes are evolutionarily added to the physical being. Contents of experience can be designated as mental if three closely related features are recognizable: value orientation, purposiveness (intentionality), and voluntary action.

Psychophysical parallelism

Wundt coined the term *psychophysical parallelism*. However, he rejected parallelism as a metaphysical postulate assuming two “substances.” Psychical processes and neurophysiological processes run parallel without causal interaction. Since the assertion of a causal relationship or an “identity” of both processes leads to logical-methodical difficulties, the parallelism postulated by Leibniz (1714/1720) has epistemological advantages: “Souls act according to the laws of final causes, through appetite, ends and means. Bodies act according to the laws of efficient causes, i.e. the laws of motion. And these two realms, that of efficient causes and that of final causes, harmonize with one another.” (*Monadology*, No.19, p. 11, transl. by Bennett).

Wundt emphasized the epistemological relevance of adopting two perspectives. He followed Leibniz by categorically distinguishing between two aspects of causation (within the principle of sufficient reason), namely the *principle of causality* in physiology and the natural sciences and the *principle of purpose* in psychology and the mental sciences. Both perspectives, natural causality and psychical causality, should be coordinated appropriately when designing psychological investigations. In terms of epistemology, *psychophysical parallelism* means that categorical differences exist between psychology and physiology. There are two fundamentally different reference systems that require independent principles and methods of investigation. The epistemological attribution of *natural causality* to the physical, and *purpose* and purposiveness (psychical causality) to the mental side (consciousness, cultural development) constitute the basis of the theory of knowledge and science. Purposes are conceivable only as concepts developed by purposeful mental beings. Psychology must follow these two epistemologically related principles of reasoning and acknowledge that psychological processes, as well as intellectual products, are value-based and purposeful, as compared to the value-neutral processes of nature.

Psychological Process Theory Related to a Neurophysiological Basis

Psychical (conscious) and central nervous system processes constitute two sides of a basically uniform and consistent psychophysical process. Every conscious process has a neurophysiological basis in the central nervous system. The entire psychophysical process must therefore be described in two reference systems. Wundt's *psychophysical parallelism* is explicitly not a metaphysical postulate but is conceived of as a basic heuristic in psychological research. He rejected metaphysical doctrines regarding materialism, idealism, vitalism, monism, and dualism, and his “epistemological dualism” is not a doctrine comprised of two aspects as proposed by Spinoza, but rather a methodologically refined advancement of Leibniz' suggestion to distinguish two frames of reference, i.e. efficient causes and final causes.

Critical Realism

The distinction between subject and object in perception as well as the principle of causal linkage is postulated as a fundamental epistemological presupposition. The world is not constructed by our thinking as suggested by speculative idealism and

later constructivism. Representations that can no longer be eliminated by the progressive correction of perceptions are considered objective facts. Thus, objects or things correspond to compounds of sensation. These compounds are independent of our will and have spatial independence and temporal continuity. The natural sciences seek to determine the characteristics and reciprocal relationships between the objects and therefore consistently abstract from the subject. Psychology suspends this abstraction and looks at the subjective and objective factors of immediate experience in their interactions. It is not knowledge itself, but only the possibility of acquiring knowledge that is contained in thinking. In summary, *critical realism* means that idealistic (rationalist) and sensualist (empiristic) views must be rejected, as well as the more recent materialistic, mechanistic, naturalistic, and positivist views (including today's so-called "non-physicalist" reductionism and neuro-reductionism). The *position of critical realism* does not culminate in a single absolute postulate, nor does it imply uncertainty and indecisiveness, but rather it is a deliberative proposal for mediation that might be more acceptable for many than a position that is seemingly precise, yet extreme.

Monism and Perspectivism

The pursuit of a unified world view is a fundamental demand of reason. Consistency within a system of knowledge without contradictions is more important than simplicity and the economy of a theory. However, the monistic striving for unity and the postulate of two synchronous processes contradict each other. Based on philosophical-theological presuppositions, Leibniz transferred the contradiction into two harmonizing epistemological perspectives in which the uniform psychophysical process is conceived of as natural causality in physiology, whereas in psychology it is also conceived of according to the principle of purpose (intentionality). The epistemologically advanced monism includes both the biological theory of evolution and the individual's experience of coherent self-consciousness. Instead of extending the concept of psychophysical parallelism to a *metaphysical* postulate, merely an "empirical postulate" is put forward and formulated in terms of epistemology and methodology: Psychological and physiological aspects of the uniform life process require two complementary perspectives. Beyond the abstract contradiction between parallelism and monism, a new and scientifically sophisticated strategy is developed in Wundt's methodology. The interdependence and deliberate taking of perspectives are the formal expressions of an interdisciplinary approach and signify an argumentative and perspectival style of thought with the aim of unifying philosophical and empirical scientific endeavors.

Categorical Distinctions and Relational Terms

Categories – such as time and space – have a high degree of universality with respect to thinking. The category *causality* is more general than the category *purpose*, which is limited to human intentionality and thinking about goals, means, and ends. In the doctrine of categories, a distinction can be made between *general* (a priori) categories and *regional* (special) categories of psychology, physiology, and other sciences. Each discipline develops basic concepts in order to structure empirical findings. Thus, the pattern of regional categories is tentative and incomplete since new viewpoints and scientific concepts will be developed and others abandoned. The *relational terms*, e.g. the *emergence principle*, specify the mode of connecting and expanding propositions (and theoretical constructs). Such concepts, in contrast to the simple logical conjunction of propositions, have an important knowledge-building function.

Meta-relations, e.g. *perspectivity* and *complementarity*, are higher order concepts connecting two or more reference systems that supplement each other. These specific terms were not used during Wundt's time; however, the underlying concepts are evident in the epistemology of Leibniz and Kant. With respect to psychophysiological research on anxiety, the multimodal assessment of states of anxiety relates to three different systems: the subjective experience and the physiological and behavioral reference systems. With respect to moral responsibility, a unified view is sought that encompasses the paradox of the experienced freedom of the will as well as strict causality in neurophysiological processes. Each of these reference systems is characterized by a set of categorical and methodological specifications.

Fundamental Categories in Psychology

The reference to a subject is the most fundamental category in psychology. Psychology – like humanities in general – begins, where "man, as a willing and thinking subject, constitutes an essential condition of empirical investigation." The main categories here are *value*, *purpose*, and *voluntary action* in their psychological context. In contrast to nature and natural sciences, the mind and mental sciences is characterized by sensual, aesthetic, ethical, and intellectual values as well as concomitant motivating feelings. Subsequent voluntary actions indicate that the *subjectively* evaluated *purpose* (and goals, means, and ends) now appears as an *objectively* operating *cause*. Here the concept of the *causal-final axis* can be used to illustrate the change of perspective from the progressive view, i.e. causally directed at the effect, to the regressive view, i.e. conforming to intentions, goals, means, and ends. However, Wundt rejected the philosophical notion in teleology that nature or human history have purpose and are moving to a particular goal. – Causality and teleology as well as cause and purpose are the cohesive

forms of the *law of sufficient reason* formulated by Leibniz. Neurophysiological causal chains are analyzed in terms of cause and effect, whereas conscious processes are typically analyzed according to intentions and realized goals.

Category Mistakes

Category analysis (*Kategorialanalyse*) and *category mistakes* are newer concepts developed mainly by Nicolai Hartmann in his theory of categories. Since his doctrine clearly corresponds to Wundt's views, his insights into category theory should be adopted in modern attempts at reconstruction of Wundt's system of principles. Epistemological reflection on categories and principles is one of the fundamental features of Wundt's thinking. Many of the controversies between theoretical orientations in psychology and the independence of certain subareas of research and "schools" can be traced back to the issue of adequate categories and alleged category mistakes. Common category mistakes, i.e. transgressions into other *spheres* of reality in Hartmann's sense include biologism, physicalism, materialism, and vitalism on the one hand, and psychologism, intellectualism, idealism, personalism, and anthropomorphism on the other.

Psychical Causality: Categories of Cause and Purpose in a Coordinated Explanatory Approach

Causality explains connections within nature, including human biology, and is the fundamental principle of scientific prediction based on the knowledge of necessary and sufficient conditions. The common scientific understanding of causality implies an energetic (material) impact in the relationship of cause and effect. If a necessary and sufficient cause is given, then the result follows with strict, or at least probabilistic, regularity. Therefore, precise, or at least statistical, predictions are possible in physics and technology, which is not the case in the psychology of individual events or cultural development. However, the fundamental categorical difference states that psychical processes, from the parallelistic standpoint, cannot be caused by physical (neural) processes or stimuli, but only by connection with other psychical processes. This is generally referred to by the term *psychical causality*, without doubting the *physiological basis* of all psychical processes. The general psychology and developmental theory of the mind (cultural psychology) require fundamental categories such as *subject*, *value*, *purpose*, *decision-making*, and *voluntary action*, as well as corresponding principles in methodology.

Psychology is an empirical science coordinated with physiology. Both complement each other and can exhaust the entire range of knowledge about the psychophysical unity of human beings only together. On a methodological level, this means a systematic reversal of perspectives in the study of psychical processes and physiological changes in a research program, especially if directed towards psychophysiology and neuropsychology. To summarize, in epistemological terms, two categorically distinct but complementary reference systems must be coordinated. A didactically suitable example was borrowed from cultural psychology. The discovery of making fire illustrated this change of perspective and the coordination of causal and (goal-oriented) analysis (cf. Chapter 3. 8).

System of Principles

The concept of *psychical causality* is at the core of Wundt's *system of principles*. This idea is closely intertwined with the theoretical assumptions and experimental investigations relating to his theory of apperception, which reflects a profound influence from Leibniz. Principles are conceived of here as relational concepts, as they refer to types of connection in individual psychical processes and cultural development. Thus, *principle* refers to a basic condition for linking the facts of a domain. Principles are derived from generalizations and individual cases, and they allow exceptions and singularities. These principles are not strict nomological laws that inductively summarize several complex facts and make predictions possible.

Research on the process of apperception led to the elaboration of a system of *principles of psychical causality*. Examples were taken from many fields of psychology, including sensory, emotional and motivational processes, as well as socio-cultural relations. The *principle of creative synthesis*, i.e. the *principle of emergence*, is foremost among the principles and states that new properties (qualities) appear in the process of apperception, as well as in cultural development, which were not present before. The *principle of the heterogony of ends* relates to the process of human action based on the observation that planned actions often entail unwanted consequences as well as negative or positive side effects. These multifaceted processes are evident in the process of self-organization within cultural development. The *principle of relatedness* and *principle of context* refer to the dependency or *relativity* of a certain feature or element with respect to the setting or frame of reference. The *principle of contrast* states that a common tendency exists to think and feel in dualistic schemes, for example, in love and hate, or extremist political attitudes. These principles are evident in the general process of apperception and cultural development, and they serve as heuristic strategies in psychological interpretation (qualitative psychology).

Causality and purposiveness appear to be quite evident, as it is a reversal of perspective on a *causal-final axis of explanation*. Wundt referred to Leibniz by reaffirming that causal and final cause ("teleological") explanations are both deductions from the fundamental postulate, the *principle of sufficient reason*. Wundt objected to unidirectional causal analysis in

psychological research, and required a complementary non-reductionist methodology, i.e. a coordinated strategy of causal and final (teleological) explanations. This applies in psychology in general and is indispensable in the mental sciences since humans' act with purpose according to motives and values.

Reference systems

Reference systems serve to arrange and relativize observations or statements and, in this respect, correspond to *context* in hermeneutics. In physics, reference system is a term used to describe a position-dependent magnitude in order to anchor or represent the position and orientation of an object. In addition, the position and movement of the observer can also be included and thus qualified. Categorical differences are introduced when the reference system, reference object, and observer are distinguished. With respect to Wundt's epistemology and methodology, there are three distinct frames of reference:

- (1) the reference system of central-nervous processes (neurophysiology);
- (2) the reference system of individual psychological processes (consciousness), i.e. sensory and other representations, feelings and affects, as well as instinctive and voluntary activities (general psychology);
- (3) the reference system of socio-cultural processes and accomplishments, as well as intellectual products of the community (cultural psychology).

The processes to be described in reference systems (1) and (2) are parallel and non-interactive. They require categorically different, complementary descriptions. The processes to be described in reference systems (2) and (3) interact and the descriptions are similar, despite the distinctiveness in terms of the individual (subject), socio-cultural (intellectual) community, and interaction. The distinction between co-existing reference systems serves the purpose of methodological clarification; however, it demands a systematic reversal of perspective:

- *monism*: one life process seen from different perspectives;
- *dualism*: the psychology of individual and cultural processes versus neurophysiology in terms of categories (epistemological dualism);
- a *pluralism* of methods.

The definition of co-existing, categorically distinct reference systems serves the purpose of epistemic classification of complicated relations and references. The term *perspective monism* – not used by Wundt – is a shortened term for his original conception (cf. Kim's "monistic perspectivism").

Perspectivism

Wundt often emphasized his aspiration towards a consistent worldview (see terms like *unitas in multitudine*, *unity in multiplicity*, *unitas multiplex*). The concept of *perspective* was also coined by Leibniz and can be extended to an epistemic principle describing views that are at parity. Perspectivity (perspectivism) does not mean unspecific pluralism, but rather an epistemological standpoint. What is meant is not a mere juxtaposition of viewpoints, a dialectical counterpart, or a pluralistic arbitrariness, but the challenge of seeking *correlated concepts* and an ultimately monistic representation (similar to the "theory of all" in physics). There is reason to prefer the concept of *perspectivity* to the *complementarity principle* coined by Niels Bohr (1937), because his concept, aside from the specific wave-particle phenomenon, is hardly able to be interpreted in general methodological terms. Theoretical psychology has the task of epistemic reflection and advancing an overall concept. Wundt's intention and endeavoring to shape this task can be further reconstructed in some respects.

Integration and Coordination

Wundt preferred the general term *connection* and *synthesis* for unification instead of "integration," and he used the latter only in the mathematical sense. He also objected to referring to psychological processes, sensation, and thinking as *functions* of the brain since by function he understood that one variable is transferred into another through mathematical operations, and such operations in this case lack an "analogous similarity." Today, integration and levels of integration are common terms in system theory.

Empirical studies of psychological processes reveal sensory representations, feelings, affects, drives, and acts of will. Such findings are isolated aspects or components depending on the method used, i.e. mere abstractions from a coherent psychological process. At the core of theoretical considerations and empirical studies are theoretical assumptions about the connections between such process components ("Elemente"). A highly differentiated terminology was developed to distinguish, at least

conceptually, between psychological compounds (“Gefüge”) as well as variants of associative and apperceptive connections which aggregate the elementary features.

Another strategic task is the linking of the psychological and (neuro-)physiological reference systems. Here, Wundt used terms such as *mutual supplementation*, “ways of looking at things,” and *coordinated analysis* according to cause and purpose. He introduced the term *Korrelatbegriff* (“bridging concept”) in neuropsychological research, e.g. the psychological concept of *attention* and its equivalent in fronto-cortical neural network activity. *Connection (integration, synthesis)* as the unification of the analytically separated psychical sub-processes and *coordination* of the psychological reference system with a categorically distinct neurophysiological reference system, and appropriate *correlated* terms, could help clarify the terminology.

Methods

Method Pluralism

The following types of methods were used in Leipzig: observation, self-observation under experimentally controlled conditions, measurement methods in psychophysics, reaction time measurement, auxiliary physiological methods, i.e. recording of physiological parameters, speech activity, and statistical description. Typical experimental paradigms were developed, including the methods of impression, reaction, expression, and reproduction. Control techniques included the anchoring of psychophysical methods by means of physically defined stimuli, separating the roles of the investigator (experimenter) and the subject, and familiarizing the experimenter with his task. In the domains that were scarcely accessible, including motivation, Wundt had to rely on self-experience and observation. In the cultural psychology of earlier times, he relied on objective available material, objectivations (“Objektivierungen”) of intellectual (mental) accomplishments, i. e., works of art, texts and forms of religion, archaeological traces, literature and documents, travelogues and other materials, including the results of experimental and other scientific studies. He used pure description, critical interpretation, generic comparison, and description of typical cases. This also applied to social and political developments in contemporary society as depicted in *Völkerpsychologie* vols. 7 to 10, but without a detailed discussion of methods.

While Wundt witnessed and critically assessed the development of the questionnaire method in psychology, there is only one indirect reference to the laboratory-field problem, i.e. the issues of internal, external, and ecological validity. In the controversy with Meumann about educational psychology and (experimental pedagogy), Wundt dismissed the attempts to transfer results from experimental memory research as premature and called for a sufficiently elaborated scientific grounding.

Multimethod Approach

Experimentation in psychology is to be supplemented by the history of mental development and comparative psychology. This statement by Wundt dates back to 1862 and was contained in his first book on psychology. Later he provided a standard definition of the psychological experiment and established general rules of comparative investigation and critical interpretation, referring to the hermeneutic tradition. His research into the development and use of language exemplifies the combination of experimental and statistical methods, observation, speech recording, comparative studies, and methods of interpretation, all of which have their own place in a *multimethod approach*. The research program at that time was not yet explicitly termed *multimethod*, but the innovative approach – already evident in the founding phase of psychology – is notable. The strategic task was to elaborate, on the one hand, adequate methods and paradigms, i.e. a standardized experimental methodology with appropriate laboratory equipment and, on the other hand, the method of comparison and critical interpretation according to rules. In this sense, Wundt was an *experimenter* as well as a representative of the *hermeneutic* tradition at the same time.

Multi-Referential Theoretical Constructs

Theoretical constructs like *apperception* and *voluntary action* represent highly complex theoretical conceptualizations and adequate operational definitions were only available to a very limited extent. From a methodological point of view, multimethod strategies (multimodal assessment) would be adequate. A contemporary trend in methodology known as *multiplism* (Cook) is related to Wundt’s methodological pluralism, e.g. multiple operationalizations and multitrait-multimethod analysis (Campbell and Fiske), multivariate conceptualizations (R.B. Cattell), the lens-model of multiple relationships (Brunswik), multivariate reliability and validity theory (Cronbach, Wittmann), multimodal diagnostics that refer to categorically different data levels, and similar strategies. What these programs have in common is that they deal with a fundamental problem of psychological research. The systematic use of conventional *indicators* (operational definitions) of a theoretical construct often results in surprising inconsistencies that suggest defining a number of sub-constructs. The statistical method of correlation was already used by Spearman in Leipzig to assess the consistency of five measures of attention, similar to the factor analysis that Spearman later developed. The pleas for “multivariate thinking” in psychology and for perspectivity, then as now, do not meet expectations for simple strategies of research and practical application in the field of psychology. The scientific progress

of psychology, however, can be achieved through innovative and more sophisticated theoretical concepts as well as through accompanying innovative methods and their combination, as Wundt suggested in 1863.

Reflection on Philosophical Preconditions

The epistemological presuppositions evident in empirical psychology and Wundt's own postulates and principles inspired him to emphatically insist on the connection to epistemology and metaphysics. How else should psychologists be continuously encouraged to critically reflect on their own presuppositions? Wundt's conception of "Wissenschaftslehre" (theory of science) was considerably more comprehensive than the theory of science in *critical rationalism*, primarily developed in connection with physics (Mach, 1886; Popper, 1969, 1984; Stegmüller, 1973, and their successors). These authors generally exclude philosophical presuppositions and "absolute" postulates in the sense of Collingwood (1940/1998), which define epistemological and ontological positions. Likewise, nomological-oriented research, modelled on physics and physiology, cannot serve as a model for psychology. Wundt's epistemology addresses ontological postulates, e.g. the mind-body problem, the subject-object problem, and as *formal ontology*, the system of categories ("Kategorienlehre"). *Purpose, subject, voluntary action* are indispensable as a guidance in psychology, however foreign to the natural science. He consistently pointed to the close connection between the epistemological postulates, methodology, and research strategies. Contrastingly, most of today's psychology textbooks omit the discussion of epistemological postulates, which might reveal the author's philosophical-ontological presuppositions.

Wundt's advanced concept of science in psychology might have become a comprehensive program for this new discipline and a frame of reference for many, though not all, of the directions that are partly segregated today. Wundt's system of principles would at least have provided an excellent basis for a discussion about the question as to what extent these postulates and principles should be accepted, adequately developed, or replaced. The vast majority of psychologists did not adopt Wundt's conception, and probably did not even hear or read about it.

5.5 Wundt's Theory of Apperception

Wundt's original achievement was to transform Leibniz' distinction between perception and apperception into a program of empirical research. How could this epitome of conscious activity be defined in psychological terms and examined experimentally following the lead provided by Fechner's psychophysics? On the one hand, Wundt's conception of active (motivated) apperception differed from Kant's *pure transcendental synthetic unity of apperception* and from Herbart's intellectualistic views. On the other hand, it is opposed to British associationism and explanations based on relatively simple mechanisms of association.

First and foremost, Wundt's apperception theory referred to the active control of attention and was then extended to the psychical (apperceptive) connections of sensory impressions, representations, feelings, and volitional activity, and also comprised the meta-psychological understanding of (self-) consciousness as the highest synthesis. Apperception psychology is not confined to its foundations in experimental psychology, but constitutes a guiding idea of Wundt's entire psychology. The autonomous status of conscious processes and of the will and the principles of psychical causality are primarily evident in the integrative accomplishments of apperception. The higher levels of mental activity, extending to cultural development, are characterized by the emergence principle in the process of psychical synthesis. In cultural psychology, Wundt often referred to his apperception theory. Based on this, he also examined the semantic changes in language ("Bedeutungswandel") and the shift of motives in many areas of cultural development.

Apperception, thus, is the central theoretical construct in Wundt's psychology. Apperceptive processes are the highest form of psychical connections, and analysis can show how psychical processes are temporally related to each other and how they form new connections and produce effects. Thus, the apperceptive process can also be understood as development and self-development, which includes the emergence of intellectual-cultural achievements. In his experimental psychology, Wundt established and generalized this concept, which was inspired by Leibniz's psychology.

Wundt's theory of apperception forms the basis of general psychology and cultural psychology. Apperception is also Wundt's most important bridging concept for neuropsychological research, stimulating coordinated examination within psychological and neurophysiological reference systems (cf. Chapter 3. 3, the modelling of the fronto-cortical processes with hypothetical neuronal afferences, efferences, and re-afferences, activating and inhibitory functions).

In connecting elementary psychical processes, qualitatively new and richer features emerge. The simplest case is a sound, which is experienced as more than the sum of single tones. Every spatial representation is a product, in which some elements lose their independence, causing the spatial orientation to attain completely new qualities. In a state of affect, with dissonant feelings, more than the sum of these components is experienced. New phenomena characterized by an enhanced quality and value emerge, prepared in their elements, but not yet elaborated by them (1911, pp. 755-758). On a higher level,

there is the volitional process composed of sensory impressions, representations, feelings, affects, motives (intentions), and unified into a new compound. These relationships do not result from mere mechanical association since the connections attain new qualities during the process of apperception, e.g. a volitional process obtains new emotional qualities. This synthesis is revealed even more distinctly in artistic imagination and in the expressive potential of language.

The entire apperceptive process can be divided into five partial processes:

- (1) increasing clarity of a certain representation or a complex of representations, connected with a feeling of activity that is characteristic of the whole process;
- (2) inhibition of other available impressions or contents of memory;
- (3) sensations of muscular tension and the associated feeling tone, which enhances the primary emotion;
- (4) enhancing effect of this sense of tension on the sensory contents of the apperceived representation by co-excitation, provided there are favorable conditions;
- (5) as subjective side effects of the attentional processes in the narrower sense, there is the course of feelings of tension and release which are especially characteristic of the beginning of the whole process.

According to Wundt, processes (1), (2), and (3) are essential, while (4) and (5) might be absent depending on the intensity and duration of the process. "Insofar as all these components of an act of apperception are contained as contingent factors in any volitional act, including external activity, the apperception is at the same time an elementary act of will and a constituent component of all volitional activity." (1911, p. 316).

Association and Apperception

Unlike the elementary and passive association processes, apperception means that active and selective processes take place. Synthetic, analytical, and combined apperceptions constitute the main types of complex connections. Further distinctions were made based on experimental research in Leipzig, such as connecting and segmenting functions, the agglutination of representations, and merging, especially in language forms, with the condensation and displacement of representations as two possible outcomes. Such compounds are made richer through substitution of terms, the segmenting function of replication, new production through imagination, and the mingling of concepts. There are *intermediate* forms of association and apperception as well as *combinations* of associative and apperceptive processes.

Wundt explained the process of association with examples from language, i.e. the association of a complete word representation that includes the image of the letters and the articulation movements in both directions with variable intensity and associative tendency based on individual training, and he referred to the accompanying feelings of activity and tenseness. Apperception refers to connections of a higher order. Because of the continuous transitions, associative and apperceptive processes are not sharply distinguishable from each other. As expectations enter the apperceptive processes, there are differences in complexity, and there is a "creative synthesis" of elements into structures with new attributes. Apperception is a higher-level process compared to the associations, and it builds from them, but not in a simple additive sense. Wundt, in his later work, did not strictly distinguish between these two types of psychical connections. Whereas in the process of simple association, elementary parts (written letters and sounds) are linked, apperception refers to a higher order process. So, it is a matter of differences in complexity because the apperceptive process is partly formed by expectations as well, and new qualities emerge in a "creative synthesis." Wundt states: "Rather, it is a new entity, whose character is essentially determined by the relationships in which the individual associative processes entering them are involved, and which they present to other apperceptive compounds of the same consciousness." (1911, p. 499).

These definitions were elaborated further based on the experimental research in Leipzig (1911, pp. 500-554), and Wundt described: synthesizing and analyzing functions, the agglutination of ideas, fusions, especially with linguistic forms, with two possible consequences: "the condensation and the displacement of ideas" (1911, p. 545). Such connections are richer by the substitution of a concept, by analyzing functions of imitation, the creation of imaginative activity and merging of concepts. The terms "condensation and displacement," already found in the second edition of the *Grundzüge*, were later often used by Freud to highlight *primary processes* in his dream analysis and other contexts.

In discussing language and writing disorders, Wundt used a scheme to depict the development of word formation. He distinguished between the *graphic part Z*, the *sound part L*, and the *concept part B* of a word ("graphischer Anteil", "Lautanteil" und "Begriffsanteil"). L and B are each composed of two sub-components: the *acoustic part a* of the sound and the *motor part m* of the perceived articulation ("Artikulationsempfindung"), as well as Z from the optical o and the motor m' of drawing movement sensation. Possible linguistic associations are represented by connecting lines. "The boldness of these [lines] symbolizes the strength of the association, and the arrows attached to it indicate their directions. The symbols v' and g' on the right signify any other conceptual representation that may be associated with v and g. The intention is to illustrate the occasional effects of external associations, especially those with images from memory."

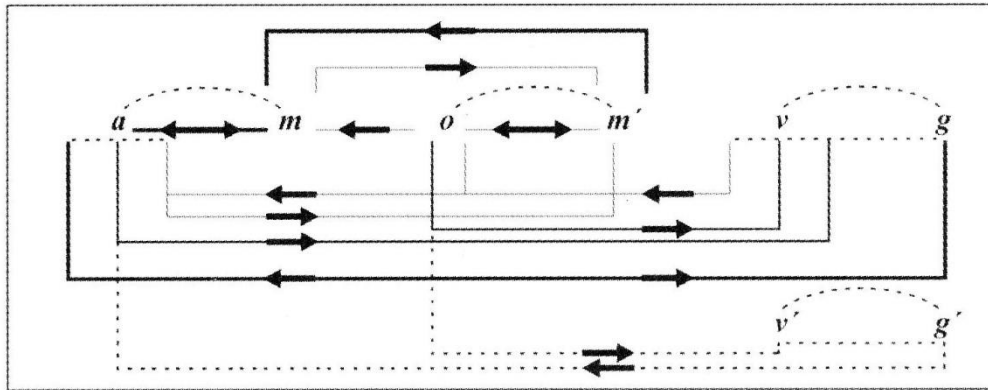


Figure 6: Linguistic associations in word formation (*Völkerpsychologie*, 1911, p. 570; adapted from Kegel, 2006, p. 149), symbols explained in the text.

Wundt used this scheme to explain nine typical speech disorders, such as agraphia, alexia, and motor aphasia. – “The termination of the association v a cause the symptoms of ordinary ‘amnesic aphasia.’ Since the connections v a and a m are continuously practiced in speaking, a m usually also suffers with v a. Atactic aphasia is connected to amnesic aphasia to some degree” (*Völkerpsychologie*, Vol. 1. Language, 3rd ed. 1911, pp. 568-575). Wundt then explained how the tachistoscope method is suited to investigate the *complication* in the representation of a word consisting of six segments. Wundt’s hypotheses concerning the effect of the perceived articulation process here, as well as the influence of perceived muscular tension and autonomic activation on apperceptive processes are noteworthy (cf. Chapter 3. 3). – Helmholtz was the first researcher to propose the existence of an efference copy of the *motor commands* controlling eye muscles, to enable the distinction between self-initiated and passive movements. Such “reafferent effects” on central processing were investigated experimentally much later by von Holst and Mittelstaedt.

De Kock (2018) explores Wundt’s “apperceptionist account of meaningful speech.” She provided an analysis of the way “in which Wundt’s apperceptionism conditioned his account of the relation between thought and speech, and by extrapolation, of disorganized thought and speech. While Wundt’s pivotal role in the development of the psychology of language is relatively well-known, discussions on this part of his theorizing tend to focus exclusively on his gestural or motor account of language. This obliterates the complex theoretical background of Wundt’s theory of language and speech, as well as its systematic place within his psychological system. Highlighting this neglected dimension of Wundt’s theorizing, however, could open up a new horizon of pressing research questions in the historiography of psychology.” (2018, p. 271).

Generalized Apperception Theory

The term *apperception* refers to a complex system of concepts and hypotheses about the integrating processes in psychical activity. Already in the emergence of attention and its development, multiphasic and multimodal development can be described concerning gradual differences of clarity and intensity of awareness, with corresponding feelings of activity and other emotional tones, as well as tendencies toward initiating actions. Psychical components are actualized, accentuated, selected, analyzed, coconnected, and expressed in different ways, as well as evaluated and aligned. Thus, they are not just “processed,” but “creatively synthesized.” Based on his neurophysiological research on reflex physiology in the motor and autonomic system, Wundt was aware of the puzzling variety of specific functions, their modes of connection, and levels of systemic integration. For neuropsychological research, concise and primarily psychologically based hypotheses and *correlated concepts* in the physiology of the CNS are important. Apperception as a general term refers to a highly organized process, thus assuming typical time spans, the distinction of modalities with respect to sensations, conceptual representations, feelings, and volition – altogether a *multi-referential* conceptualization.

The generalized apperception theory basically differs from Herbart’s psychology of apperception since Herbart primarily referred to just one main aspect of the Leibnizian tradition. Herbart’s focus was on the connection of new percepts with the existing representations, i.e. the *mass of representations* (“Masse der Vorstellungen”) in the individual’s consciousness, and he speculated about the underlying laws. Leibniz had also considered the *dynamics*, i.e. the volitional basis of such activities and, accordingly, Wundt’s conception is adequately characterized only when the dynamic component is included, i.e. the individual’s volitional activity.

Today's terms *multimodal*, *multireferential*, and *multimethod* are used here to indicate the level of scientific aspiration. Wundt was highly concerned, both theoretically and methodologically, with the questions as to how the apperceptive process could be analyzed with respect to its dynamic origin, its development and emergent psychological outcomes, and how this central process could be made accessible with experimental methods, at least in parts. He developed a multimethod research program, but often this lacked suitable methods and operationally defined concepts. Yet the heuristics of this demanding empirical approach is obvious. However, to conceive of *apperception* just as a heuristic idea would underestimate the advanced state of experimental investigations in the first and, for many years, largest laboratory in psychology.

Wundt's psychology of apperception contains a compilation of postulates, principles, theoretical propositions, derivatives, conceptual differentiations, partly with precise operationalizations, i.e. standardized experimental paradigms, and more concise sub-constructs based on the research on attention or language formation, and a wealth of further research findings. He worked continuously on further developing his theoretical concept but was not successful in achieving a consistent and systematically structured conceptualization. Important sections of apperception psychology are dispersed throughout related chapters in the *Grundzüge*, *Grundriss*, *Logik*, and *Völkerpsychologie* (here mainly on the psychology of language). In didactic terms, the study of *attention* remains the most important paradigm. Wundt did not establish a consistent multi-level concept as indicated in his early attempt at neuropsychological modeling, and which was developed in *theoretical biology* and *system theory* decades later.

An outline of reconstructing Wundt's conception

For the time being, a structuralist reconstruction of Wundt's theory of apperception appears impracticable due to its complex structure. Nevertheless, important preliminary work to this end could still be performed.

A recent article by De Kock (2018) contains essential commentaries in modern terminology on Wundt's publications and thus contributes to a better understanding of important quotations from his work. De Kock outlines Wundt's apperceptionism in the following sections: *Apperception and consciousness*; *The physiology of apperception: inhibition*; *Apperception in action: from rhythm to meaning*; *The genesis of complex psychological compounds: Wundt on the metronome*; and *Thought and speech: Making sense* (pp. 274-285). Finally, De Kock explores "the way in which Wundt's approach in this respect resurfaced in Emil Kraepelin's work": *Apperception and psychopathology: Wundt on the flight of ideas*. The subsequent section entitled *Excursus from Wundt to Kraepelin* also deserves attention (pp. 286-288).

At the center of this investigation are:

- The main outlines of Wundt's theory of apperception and the way in which it conditioned his perspective on the nature of consciousness, and the hypothesized physiological substratum of intelligent thought and action;
- Wundt's conception of the nature of thought and the psychological preconditions of the general ability to (re-) produce meaning;
- Wundt's account of disorganized thought and speech are outlined.

"In this context, Wundt's metronome-experiments will be discussed, not so much for the sake of their methodological or technical purport, but rather for their theoretical relevance, that is, their alleged ability to "demonstrate [...] the psychology of consciousness" (Wundt, 1912, p. 3). As will be explained, Wundt maintained that the analysis of rhythmical hearing by means of the metronome-experiments affords a basic explanatory model for the meaningful organization of thought and experience ... By extrapolation, Wundt used this model to account for the ability for meaningful speech." (p. 274).

De Kock notes: "As is well known to Wundt scholars, Wundt's theory of apperception constituted the core of his psychological theory and was of crucial importance to his understanding of consciousness as a whole. As is equally well known, Wundt's notion of apperception was quite ambiguous and elusive. Not only did Wundt reformulate his theory of apperception multiple times during his career (e.g., Araujo, 2016), even in its final formulation, the concept remained somewhat unstable. Furthermore, Wundt's apperceptionism comprised a complex configuration of interrelated ideas, and as such, it opened up a vast field of interrelated concepts—attention, the will, unity, the I, and so on – that codetermine one another and cannot be understood properly in isolation. Our first task is therefore to get a general grasp of the configuration of ideas at stake, and in doing so, to create an adequate framework for our subsequent investigation." (p. 274). – Apart from the following explication of the theoretical construct of apperception, additional aspects of De Kock's investigation, which is well worth reading, cannot be discussed here in detail.

"In a restrictive sense, Wundt defined acts of apperception in terms of a volitional focusing of attention [Aufmerksamkeit] that introduces degrees of clarity into consciousness [Grade der Bewusstheit], or a polarity between the (apperceived) focal point of consciousness [Blickpunkt] and the (perceived) field of consciousness [Blickfeld] (e.g., Wundt, 1911, III, p. 307). As such, the process of apperception induces a continuous dynamic between the becoming clearer [Klarerwerden] of mental contents, and the correlative obscuring [Dunklerwerden] of others (e.g., Wundt, 1914, p. 118). In a more general sense, apperceptive activity imparts a purposive dimension to our mental life, that is, the volitional focalization of consciousness

determines the directionality of consciousness or the course of representations [Vorstellungsverlauf] (e.g., Wundt, 1894a, p. 255; Wundt, 1911, III, pp. 296-297). From a psychological perspective, this directionality is a consequence of the functional organization of consciousness around volitional processes, and more precisely, around motives, defined as the feelings and ideas that “immediately indicate the direction and quality of the voluntary act which they precede” (also see Wundt 1911, III, p. 225). It is important to note that Wundt stressed the indivisible unity of ideational, affective, and volitional processes, and therefore maintained that analyses of either one of these processes in isolation are based upon a process of psychological abstraction (e.g., Wundt, 1894a, p. 210). Accordingly, the term “motive” too, refers to a mental process in which all of these elements are united. From the objective (ideational) side, Wundt described a motive as a *Beweggrund*, whereas from their affective, volitional side, he spoke of motives in terms of *Triebfedern* (Wundt, 1911, III, p. 225). The concept of “motive,” as it is used in what follows, covers both these ideational and affective elements.

By means of the notion of “motive,” Wundt further distinguished between passive and active apperception. Although he considered both as ultimately voluntary acts, the former is claimed to be determined by one single motive, whereas the latter involves a competition [*Wettreit/Kampf*] between motives, and as such, necessitates an act of choice [*Wahlact*] (Wundt, 1897b, p. 577). In passive apperception, Wundt clarified, an externally or internally generated mental content forces itself upon consciousness and as such, the motive for the focalization of consciousness consists merely in the content demanding attention (Wundt, 1897c, p. 255). Therefore, passive apperception has the general structure of a drive-operated action [*Triebhandlung*] or an impulsive action (Wundt, 1911, III, p. 253).⁶ In active apperception, by contrast, a mental effort—a choice—is required to bring a single content into focus. Or, as Lange (1888, p. 391) put it, we understand by active apperception “the general ability of consciousness not to be determined by the given intensity of ideas, but to intensify ideas by means of the [...] effort of attention.” Both processes are furthermore claimed to differ fundamentally with respect to their respective feeling-quality. As a self-determined and self-determining act, active apperception is prepared and accompanied by a feeling of activity [*Tätigkeitsgefühl*], according to Wundt, whereas passive apperception (as well as mere association) is characterized by a feeling of passivity, or of giving in [*Gefühl des Erleidens*] (Wundt, 1911, III, pp. 228, 307; also see Wundt, 1906a, p. 310; Wundt, 1912, p. 81). Or as Wundt put it in his *System der Philosophie*: in passive apperception, there is a general awareness of activity [*Tätigkeit*], but not of self-determined or of autonomous activity [*Selbsttätigkeit*] (Wundt, 1897b, p. 576).“ (p. 275).

About Current Concepts

Introducing the current concept of *cognition* (“perception, imagination, recognition, thinking, problem solving, memory, etc.”) instead of *apperception* would be misleading, and not only because the term “cognition” is a highly ambiguous generic phrase. Wundt’s theoretical construction is much richer than “systems of central information processing” which are “undertheorized” because the intrinsic emotional and motivational process components are mostly disregarded. His theoretical construction appears more meaningful and inspiring than most of the current conceptions like *attention control process*, *executive control*, *control of mental processes*, or *central executive*. But it remains open what is meant by these expressions as compared to conceptions about *capabilities of the soul* in former speculative psychology. Who is the controller or programmer of this processor? A cognitive scheme, again? In Wundt’s process theory of apperception, a fictitious agent of this kind is dispensable, but he postulated a dynamism, which is biologically based on the one hand and depends on socio-cultural influences and interaction on the other hand.

Are *executive instance* or *action control instance* more convincing than *voluntary activity*? With respect to terminology it is noteworthy that in this field of cognitive psychology, many terms are derived from technology or computer programming, e.g. mechanism, control circuit, control mechanism, control instance, automatic, channel, filter, computer-aided modelling, etc. Whether this terminology is inferred from an overall mechanistic and reductionist orientation in psychology remains unclear, but it appears to be in line with Herbart’s speculation of a mathematically structured theoretical psychology. In any case, there seems to be a great temptation to reconstruct the psychical processes in sequences of programming languages and in artificial neural networks. These issues are not unimportant since they might indicate epistemological postulates implied in the ongoing controversy over mere reactive behavior as opposed to *volitional* activity and voluntary acts. Thus, the implicit epistemological presuppositions are essential and worth knowing if the sensualist-reductionist view as opposed to a mentalist-voluntarist view persists – in the tradition of Locke over Leibniz. The obvious discrepancies may generally be traced back to the preferred research methodology as well as prevalent and propagated paradigms directed at separating the components of the underlying process.

The conceptually and methodically inadequate consideration of apperceptive processes is thus far discussed as an indication of a reductionistic attitude in general psychology, i.e. an epistemological presupposition. But there is also a simpler, even trivial, interpretation, namely that any experimentation in cognitive psychology that would include the assessment, control, and planned variation of emotional and voluntary components is much more demanding and ambitious than the standard paradigms. This means that standard procedures in cognitive science are much easier to implement than valid assessments in research on emotions and motivation. Here, methodically advanced paradigms, i.e. multimodal designs with corresponding

multimethod operationalization, are required. Examples include the paradigm of orienting response (in the sense of Sokolow, 1963) and psychophysiological research on activation (stress) or basic emotions. Advanced research, however, cannot rely on the laboratory alone, but has to include *naturalistic* conditions. Appropriate recording systems allow for a strategic combination of *laboratory studies* (with higher internal validity) and *ambulatory assessment* (with higher ecological validity). Such strategies appear to be mandatory to adequately and validly assess the connection of cognitive, volitional, and emotional processes in apperception.

Looking Back

The psychological concept of apperception is prefigured in philosophical thought, primarily by Leibniz, but also by Baumgarten, Kant, and Herbart. Wundt's original achievement is the transformation into a set of psychological concepts together with an empirical research program. Unlike Herbart and other authors, Wundt demanded an empirically based multimodal conception in which the sensory, cognitive, emotional, and volitional partial processes are connected in the highest synthesis of psychical processes. The term apperception, which was widely used at the turn of the century in 1900, has become outdated in current psychology. While Wundt is seen as the founding father of experimental psychology, his central theoretical conception is mostly ignored.

The APA-Dictionary defines apperception as follows: "1. The mental process by which a perception or an idea is assimilated into an individual's existing knowledge (APPERCEPTIVE MASS). See also TENDENTIOUS APPERCEPTION. 2. The act or process of becoming conscious of a perception, so that it is recognized and understood. In apperceptive forms of VISUAL AGNOSIA, this ability is lost or impaired." (2015, p. 69). – This definition appears to follow Herbart's doctrine. Leibniz, the original author, and the empirical research by Wundt are omitted, which can be considered a historical deficit or a kind of "systematic agnosia." – The German *Dorsch Lexikon der Psychologie* (19th ed. 2019) includes an article on *Apperzeption* which refers to Leibniz and Herbart and presents a short account on Wundt's theory of apperception and its essential terms and propositions. The expansion of empirical psychology since Wundt's research program can be seen, at least, in a 700-page volume entitled *Attention* in the German *Enzyklopädie der Psychologie* (ed. Neumann and Sanders, 1996). Wundt's definition and theory of *attention* is reviewed, but his original conception, and even the fundamental terms *Apperzeption* and *Apperzeptionstheorie*, are missing in the index.

In neuropsychology, however, such aims of research are quite present, including the coordination of functional systems of distinct levels, multimodal convergence zones, the complex interaction of afferent and efferent activity, the importance of reafference from motor and autonomic systems, and the search for the higher control functions in the central processes (Chapter 3. 3). Here, too, Wundt's advanced concepts were hardly recognized and not referred to. They were not even used as an initial frame of reference.

The attempt to present Wundt's apperception theory in current terminology leads to the question of whether a deeper revision concerning important aspects of theoretical constructs is appropriate or even if the generic term "apperception" in the conceptualization of central cognitive-emotional-volitional connection should be dismissed. *Apperception* has already disappeared from the literature, i.e. modern textbooks of general psychology and neuropsychology (cf. Chapter 3. 5 and 4). Even the more detailed textbooks on the history of psychology scarcely inform about this theoretically comprehensive conception, which in terms of scope, interdisciplinarity, and "multiplism" probably has no equivalent in modern psychology. Perhaps the impression is correct that psychological theorizing and research concerning the highest level of "creative synthesis" is currently of minor importance in general psychology, although in other fields of psychology, certainly, such comprehensive concepts are needed and adhered to. Although research programs with noticeably wider theoretical horizons exist, e.g. in *cognitive emotion theories* or *action theories*, there seems to be little systematic research on the connection (integration) of cognitive-emotional-volitional processes and components. On the other hand, in his apperception theory, Wundt created a conceptual system, a multireferential construct of apperception in order to differentiate and connect the central processes. This approach is highly ambitious and the gap between conceptualization and available methods of investigation is also evident. Wundt's intentions in theoretical and empirical psychology fundamentally differ from the current mainstream of cognitive psychology, such that bridging would be highly questionable. However, the present discussion inspires consideration about the deficits in contemporary conceptualizations and about possible motives for disregarding Wundt and ignoring his original conception.

6 Wilhelm Wundt's Current Relevance

This book is neither an epitaph nor a mere reminder of Wilhelm Wundt in the history of psychology. Since Wundt, which other psychologist has established a conception of psychology, both theoretically comprehensive and interdisciplinary, or carried out a multifaceted and intensive research program with a similar scope? Wundt's conception of psychology emerged from decades of research and teaching that led him from neurophysiology to psychology and philosophy. General psychology and cultural psychology serve as a common basis in Wundt's process theory of apperception and his methodology comprises a system of epistemic principles. However, Wundt's terminology must be transposed and translated to make it clear that he anticipated concepts from system theory, such as emergence and self-organization, and that he devised multimethod strategies and conceived of the complementarity of reference systems. With regard to motivation and cultural development, Wundt was in favor of analysis that differentiates between the perspectives of causal explanation and purpose. He coined the term "psychical causality" to designate this coordinated interpretation of emergent processes, in contrast to "natural causality" in physiology.

Wundt developed a genuine and unified epistemology (theory of science) of psychology, which demands the ability and willingness to distinguish between perspectives and reference systems and to realize that the reference systems for psychology and physiology are complementary. This also includes a multifaceted methodology that requires an equal amount of competence in both the experimental and interpretative paradigm. Wundt defined the field of psychology in a comprehensive sense, and he also explained why epistemological-philosophical reflection and critique are indispensable.

Should Wundt and his work be relegated to the past? He is rarely quoted and probably barely read anymore by German-speaking audiences, and even less so by English-speaking ones. Wundt appears to have become an historical footnote who is primarily remembered for establishing the first psychological laboratory, and perhaps for attracting students and visitors from many countries to Leipzig or writing numerous books about "psychology based on physiology" and "folk psychology." Wundt's actual intentions during his more than 50 years of research, which was at that time already interdisciplinary, are obviously of little interest today. His research as a neurophysiologist and his wide range of interests were a precondition, and probably also a motive, for differentiating two basic reference systems and advancing a system of epistemic principles. How can research on psychical processes and their neurophysiological basis be methodologically coordinated, instead of adopting the materialistic point of view that conceives of psychical processes as simple causal effects of neurophysiological functions? Wundt's general approach is also evident in his early support of a modern conception of neuropsychology based on psychological hypotheses in order to establish *correlated concepts* in physiology, and to connect both perspectives into a non-reductionist neuropsychology, which can be seen in his modeling of the apperception process. Although psychical processes and their neurophysiological foundations constitute a psychophysical unit, scientific analysis and the construction of theories require two categorically distinct reference systems. Why was Wundt's conception not acknowledged as arguably the most important foundation in psychology, and why did it not become an integral part of today's *theoretical psychology*?

Theoretical Psychology and a System of Categories

A unified *theoretical psychology*, like *theoretical biology* or *theoretical physics*, does not exist and, in light of the continuing and fundamental controversies within psychology, should not be expected any time soon. Therefore, theoretical psychology can only consist in analyzing and systematically updating the ongoing discourse, as well as more precisely specifying the respective lines of argumentation.

The next goal, however, remains to mediate between incompatible positions and to at least strive for a structured juxtaposition of the divergent conceptions of psychology instead of a diffuse pluralism and arbitrariness. The general objective, as in theoretical biology or physics, which aims at a "Theory of Everything," remains to develop an epistemologically advanced concept without being caught in a web of contradictions. The following list provides some examples of traditional and more recent controversies:

- The psychophysical problem (mind–body problem), with or without relating it to the concept of a transcendent soul.
- The epistemological subject–object problem.
- The definition of scientific psychology, which not only enumerates areas of interest, but includes a categorically explicit definition.
- The controversy about causal explanation in psychology and the necessity of supplementary explanations in terms of purpose, means, goals, values, and intentionality of acts.

- The categorical distinction between mental processes and products in contrast to neurophysiology in terms of fundamental categories.
- The “psychometric” approach in favor of measurement, modeling, and mathematical conceptualizations versus psychological understanding and interpretation in clinical and “qualitative psychology”.

Such controversies obviously represent philosophical presuppositions and general assumptions about human nature. Since the beginnings of psychology as a discipline, the controversy between a reductionistic and a non-reductionistic approach has persisted, which was perhaps most clearly fought between Mach and Avenarius on the one hand, and Wundt on the other. However, persistent philosophical presuppositions and absolute postulates obviously exist. An example of a rather old-fashioned and simplistic definition is the tripartite division of psychology into “faculties” (Tetens, 1777), i.e. cognition (thinking), emotion (feeling), and volition (wanting), which still exists in “cognitive psychology.” The mentalist and voluntarist positions, which are opposed to the materialistic and physicalist positions, remain the preferred ones and appear to prevail in many fields of psychology. Consequently, these positions lead to distinct assumptions about the human being and the classification of psychology as a neuroscience, behavior science (ethology), and mental and social science, as well as judgements on the selection and validity of research designs and methods.

The Kantian doctrine of *fundamental categories* includes space and time, substance and actuality, the principle of cause, the principle of purpose, etc. Categories indicate universal designations about “that which inherently matters,” and are assumed to govern knowledge and reasoning more or less “a priori.” Wundt emphasized the epistemological and methodological distinctiveness of psychology and elaborated *specific categories*. Specific categories in psychology provide formal concepts that are essential to understanding and adequate reasoning in scientific psychology, and thus are not identical to *general concepts* in psychology, which are predominantly based on experience, i.e. inductive reasoning. Categories and epistemic principles lead to methodological consequences, and thus indicate whether or not a particular method is appropriate to actually assess the process (phenomenon) in question.

Category errors in Hartmann’s sense occur mainly when categories of fundamentally distinct spheres, inanimate nature (matter), biological organisms, consciousness, and the mental (spiritual) sphere are mingled, for example if the principle of purpose, which is essential to human motivation, is transposed to inanimate nature or biological evolution (teleology of nature), or if mental processes are only explained in physiological terms, ultimately being reduced to physical laws (cf. the perennial debate on the freedom of will). The *system of categories and principles* proposed by Wundt also includes distinct epistemic relations such as emergence, self-creation, context, and contrast. Since Wundt constantly distinguished between categorically different ways of looking at scientific issues, the term *reference system* can be used here. *Meta-relations*, such as perspectivity or complementarity, combine these reference systems with the intention, for instance, of separating the respective methodologies, i.e. psychological and physiological research, while at the same time searching for coordination and correlated concepts (“Korrelatbegriffe”).

With respect to his system of categories and principles, as well as the essential frames of reference, Wundt might be considered the most important forerunner of a theory of science in psychology. Some other well-known psychologists have also formulated essential categories and principles, commented on the theory of science and the orientation of empirical psychology as a natural or mental science, and expounded their views regarding the mind–body problem (cf. Fahrenberg, 2013a, 2015a). Wundt, influenced by Leibniz, coined the concept of *psychophysical parallelism*. Conscious processes and central nervous system processes form a parallel, yet uniform psychophysical process, which is scientifically investigated and described in two reciprocal (complementary) reference systems. However, Wundt did not stop at this postulate. He adopted the idea suggested by Leibniz and further specified it: Physiology follows natural causality, but the continuity of the thinking, self-conscious, and striving subject follows the principle of purpose (in the particular form described by Wundt’s principle of psychical causality) in a coordinated mode. The psychical process (consciousness) is parallel to the *causal chain* of neuronal activity in the brain, but the *psychical connections* follow psychological principles and require autonomous categories, such as subject, purpose, and value, which are alien to neurophysiology. Neurophysiological explanation does not indicate the *purpose* of nervous activity; however, voluntary actions essentially refer to motives and goals, which cannot be adequately described and explained without knowledge of such intentions.

Psychology in an Interdisciplinary Horizon

In Leipzig, Wundt established the first laboratory for experimental psychology devoted to a continuous research program, thus becoming the founder of psychology as a scientific discipline. His conception of psychology combines sensory psychology and neuropsychology with general psychology and cultural psychology, as well as animal psychology, which was unusual at that time. Besides sensory psychology and psychophysics, his general psychology focuses mainly on the theory of apperception and the theory of motivation, feelings, and affects. He pursued a comprehensive program of empirical psychology and extended its scope to include the psychology of language, art, religion, society, and law in order to study the mental and cultural development of humans within a community. His guiding principle was to work out a *developmental theory of the*

mind from a psychological perspective. Influenced by Leibniz's philosophy, Wundt established the first theory of science in empirical psychology. He extended his perspectivist approach to ethics, combined normative statements and empirical statements taken from cultural psychology, and was guided by the notion of a *general idea of humanity*. His presentation of formal logic is augmented by psychological considerations regarding the laws of thinking. His intention to supplement normative statements (norms) with empirically derived psychological laws was sometimes misunderstood as *psychologism*. But Wundt strongly rejected psychologism, which sought to displace logical analysis of thought (or ethics) with psychological analysis. He defended his complementary, philosophical, and psychological analysis of both the laws of thinking and ethical norms against Husserl (1900, Kusch, 1995).

Reference Systems and Perspective Monism

Wundt's epistemic notion of psychophysical parallelism, including his epistemological rationale of two categorically distinct reference systems, resulted in a comprehensive metatheoretic conception. Convinced that the pursuit of a unified worldview is a fundamental demand of reason, Wundt connected these reference systems in a genuine *perspectivist monism* and demanded the systematic reversal of perspectives between reference systems. Such an approach would have far-reaching consequences on teaching and research in psychology, which should enable a systematic taking of perspectives and corresponding methodologies. Perspective monism describes this approach. Wundt's epistemology and methodology contains three categorically distinct reference systems:

- (1) Reference system based on neurophysiology.
- (2) Reference system based on individual psychical processes (psychology of consciousness).
- (3) Reference system based on sociocultural processes and intellectual achievements ("objectifications") developed by the community (cultural psychology)

Reference systems (1) and (2) are categorically distinct, whereas (2) and (3) largely overlap, except for categories relating to social interaction, language, and cultural development in the community.

Integration and Coordination

The immense richness of detail of Wundt's work and also the scope and refinement of its structure is impressive. Contemporary reviewers point out his multi-layered, coherent accounts and polyhistoric and perspectivist presentation. Wundt's work is characterized by a comprehensive theoretical horizon and interdisciplinary approach – hardly achieved since – as well as a remarkable integrative capacity. However, the term *integration* has to be explained. In other fields, "integration" means the merging of data, components, or technical functions of an equivalent or similar nature, and these operations are also reversible, such as in mathematics, e.g. integral or differential calculus. Here, the semantics of such elements does not differ categorically.

A useful distinction could thus be made as follows:

- (1) *Classification* of topics and methods in a wide horizon of psychology, natural sciences, mental sciences (humanities), epistemology, ethics, and metaphysics.
- (2) *Integration* of aspects or process components in order to set up the psychological theory of apperception as well as a conception of cultural development.
- (3) *Combination* of certain methods to elaborate psychological research strategies and multimethod assessment.
- (4) *Coordination* of categorically distinct reference systems. In general, this implies the assignment of terms and theories of general psychology and neurophysiology. Strategically, it entails coordinated psychological explanation in terms of causes, ends, and purposes (psychical causality). On an empirical level, it entails the search for physiological concepts and findings that are suited to the analysis of corresponding psychological processes as "correlated" concepts.

Wundt's conception of psychology is characterized by a high degree of interdisciplinary, epistemological, and methodological aspiration since Wundt believed that psychology requires its own set of principles. On the one hand, it is fundamental to all humanities and, on the other hand, it must consider the physiological foundations of psychical processes, i.e. sensory physiology and the physiology of the CNS, while not ignoring the philosophical (metaphysical) presuppositions involved. Thus, a versatile multimethod empirical approach is necessary, which includes controlled self-observation, experiment, comparative observation, and interpretation. Psychology should remain affiliated with philosophy in order to promote the necessary criticism of fundamental prerequisites of psychological research and practice.

The central construct of *apperception*, which connects Wundt's general psychology to his cultural psychology, can therefore be conceived of in today's terminology as multimodal and multimethod research that is interpreted in a multireferential (perspectivist) context.

Windelband's thesis has already been quoted: "... it would be presumptuous and an underestimation of the human mind's ability to develop if we thought that the forms of explanation to which it has reached thus far will remain the last and highest" (1876, p. 23). Why should the theory of knowledge and the theory of science of psychology be considered already completed? Should we not expect that new concepts and even more sophisticated frames of reference and their meta-relations will be developed in the future? Maybe these ways of thinking can better address current epistemic and methodological problems.

Again, which other psychologist besides Wundt has established a comparable research program, developed an almost universal, theoretical and methodological horizon, and had the necessary competence in both psychological, experimental as well as interpretive, *and* physiological methodology? Not to mention Wundt's explicit program based on a psychological developmental theory of the mind including ethics and a guiding idea of humanity.

Delving deeper into Wundt's work, the following question becomes even more relevant: Since a comprehensive theory of psychology is still necessary, shouldn't we first seek to fully understand what Wundt previously worked out? This question has not been answered or even systematically addressed by historians of psychology. In fact, Wundt's concept of psychology and his epistemology did not make a lasting impact on the development of the discipline as one would expect considering the universal acknowledgement of his pioneering role in the field.

Break in Tradition

Apart from very few exceptions, contemporary publications and textbooks contain only brief, if any, references to Wundt's work, and in many instances also strikingly strange judgements as well as stereotypes and misunderstandings. Misconceptions continue to exist up to the present, even in some books on the history of psychology, encyclopedias, and distinguished textbooks. Reception research demonstrates how Wundt's comprehensive horizon, epistemology, and theory of principles have been lost. The discrepancy between Wundt's conception of psychology and later limitations within the field and methods of psychology as well as the pluralistic condition of the theory of science in psychology during the next generation raise the question as to the cause of this break in tradition.

Some of Wundt's closer collaborators with whom he had quite friendly and collegial relations expressed both respect and paid tribute to him as an eminent scholar, but also expressed remarkably sharp criticism of his ideas, which revealed shortcomings in their reception of Wundt's basic conceptions. Many areas of his psychology and epistemology were completely left out, including essential notions from the system of principles and general methodology. None of his collaborators assumed the role of "disciple" charged with summarizing and explicating his work. Kirschmann, Klemm, Krueger, Külpe, Lehmann, Meumann, Münsterberg, and Wirth either did not want to or could not adequately represent Wundt's comprehensive concept of the science of psychology in their publications. No one in this group further developed Wundt's conception. Later textbook authors also regularly refrained from explaining Wundt's central theories, system of principles, and perspective monism, so that only a barely understandable fragment of his work remained. – But how does Emil Kraepelin fit into this picture? Only recently this allegiance has found more interest: the indebtedness of one of the most eminent founders of modern psychiatry to his academic teacher and friend Wilhelm Wundt, the founder of modern psychology as an academic discipline.

Most psychologists of the next generation seemed to prefer much simpler, less complicated epistemological and methodological positions, rather than using different reference systems that would require a multimethod approach. The majority of later textbook authors pursued a seemingly straightforward approach, i.e. an orientation towards either the natural or mental sciences, and in the case of the mental sciences, they had a rather restricted scope and very limited empirical research program. – How much epistemology is necessary for empirical psychology and how complicated should such considerations be?

The research on reception and the impact analysis cannot provide simple answers about the break in tradition, distancing, or neglect of Wundt's guiding principles and work, but it can point out a number of contributing factors. Perhaps the most important reason for Wundt's relatively low impact was his high level of theoretical and methodological aspiration. Wundt's works contain a wealth of psychological detail, and his perspective-based style of thought, which he attributes to Leibniz, as well as his "Latin-trained" writing style, do not make reading easy. His body of work is probably the most extensive of any psychologist, yet neither an introductory overview of his essential theoretical positions, nor a didactically elaborated compendium of important principles and methods exists to facilitate understanding. Wundt could have perhaps facilitated understanding by providing more vivid examples, for example when the central concept of psychical causality was criticized or misunderstood.

As far as reception and distancing is concerned, external conditions must also be taken into account, in particular the First World War and the subsequent political and economic crises in Germany. It should also be remembered that very few psychologists had institutional research opportunities equal or comparable to those of the Institute in Leipzig. Wundt's talented daughter is also to thank for the preservation of his work. She provided excerpts from the vast corpus of literature on culture and society over many years and also wrote his manuscripts and letters due to his age-related vision impairments. Another

question arises: To what extent can we assume that the majority of reviewers and textbook authors during Wundt's time, or even today's historians of science, were prepared to adequately assess and evaluate Wundt's methodological principles, the strategies and outcomes of his research, e.g. his experimental apperception research, psychophysiological research on emotions, or the study of language to gain access to laws of thinking? In addition to the reluctant attitude of some of Wundt's colleagues and assistants, other obstacles such as the philosophical and religious problems of a so-called "psychology without soul," Wundt's interdisciplinary approach, and his demanding and necessarily versatile and differentiated methodology might have played a role in the reception of his original contributions.

Anyone who deals with the Anglo-American reception of Wundt's work will recognize a chain of serious misunderstandings and stereotypes that began with James, Hall, and Titchener. The few psychologists who were competent in German have obviously not been able to correct the misconceptions in an enduring manner, despite explicit references to such "caricatures" and stereotypes. The lack of language skills and translations and the poor understanding of Wundt's epistemological basis as well as his ambitious research aspirations and demanding methodology were further obstacles that stood in the way of reading and appreciating his work. During Wundt's time, the writings of Anglo-American authors were hardly relevant to German psychologists. Since the conditions of dominance are now reversed, interest in Wundt will probably drop to a minimum, i.e. he will only be mentioned in the introductions of textbooks along the lines of *founder of the first laboratory for experimental psychology (1879, University of Leipzig, Germany)*, or even reduced to a superficial label such as *Principles of physiological psychology (Wundt, 1874)*.

Wundt's work is also hardly significant in German-language psychology, although many aspects of his general and cultural psychology have a high potential for theoretical discussion and research, at least as a starting point, and are still valid in their respective contexts. Wundt's system of categories and principles appears to have had little influence on the further development of psychology. It has also been forgotten that he formulated several principles that are now part of system and process theory. He also provided original strategies in interpreting psychological relationships.

Just as he opposed the materialism and positivism of his time (Avenarius, Mach, Willy, and others), as well as English sensualism and empiricism (Locke, Hartley, Hume, Brown, Spencer, and Bain), Wundt would have also rejected modern versions of so-called "non-reductionist physicalism." Why are Wundt's explicit objections to reductionist doctrines of psychology hardly present in today's discussion? The break in tradition is clearly documented in the research on reception and impact. Many further deficits are also obvious. For example, a comprehensive biography of his life *and* work, an edition of his primary works, a selection of texts and comments, or a compendium of his system of categories and principles and methodology are not available. And there is no institution or research center explicitly devoted to commemorating Wundt's life and work, and yet standards do exist given the high visibility of Sigmund Freud and, to a lesser degree, Franz Brentano, Edmund Husserl, and William James.

Heuristics and Current Relevance

Wundt's definition of the field of psychology was comprehensive and interdisciplinary. When one-sided views temporarily become attractive and enter the mainstream of psychology – be it cognitivism, neurophysiological reductionism, computer-based modelling, a phenomenological orientation, psychoanalysis, the narrative turn, qualitative psychology, or the socio-critical new psychology – it is worth recalling the theoretical horizon of the founder of psychology as a discipline. Wundt tried to coordinate various research orientations through epistemological and methodological reflection. During the founding phase of academic psychology, he was already arguing for greater meta-scientific reflection and demanded the coordination of reference systems and research strategies. The potential of his approach is far from exhausted. Wundt remains attractive today since there is a lack of sophisticated discussion about the existing pluralism of distinct psychologies. Controversies in theoretical psychology about the goals and methods of psychology continue to persist and demand ongoing discourse, critical philosophical reflection on personal presuppositions, and the ability and willingness to systematically reverse perspectives, especially in psychology, academic studies, research, and professional practice.

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Note: The abbreviation HWPh stands for *Historisches Wörterbuch der Philosophie* (1971-2007). (Hrsg. J. Ritter, K. Gründer et al.). Darmstadt: Wissenschaftliche Buchgesellschaft.

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