

## Systematic Musicology and the History and Future of Western Musical Scholarship

*Sistematik Müzikoloji ve Batıda Akademik Müzik Araştırmalarının Tarihi ve Geleceği*

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**Abstract.** Systematic musicology is an umbrella term, used mainly in Central Europe, for subdisciplines of musicology that are primarily concerned with music in general, rather than specific manifestations of music. This article aims to explain the concept in English to international music scholars. Scientific systematic musicology (or *scientific musicology*) is primarily empirical and data-oriented; it involves empirical psychology and sociology, acoustics, physiology, neurosciences, cognitive sciences, and computing and technology. Humanities systematic musicology (or *cultural musicology*) involves disciplines and paradigms such as philosophical aesthetics, theoretical sociology, semiotics, hermeneutics, music criticism, and cultural and gender studies. The discipline of systematic musicology is less unified than its sister disciplines historical musicology and ethnomusicology: its contents and methods are more diverse and tend to be more closely related to parent disciplines, both academic and practical, outside of musicology. The diversity of systematic musicology is to some extent compensated for by interdisciplinary interactions within the *system* of subdisciplines that make it up (*systemic musicology*). The origins of systematic musicology in Europe can be traced to ancient Greece. Historical musicology and ethnomusicology are much younger disciplines, and the relative importance of the three has fluctuated considerably during recent centuries. Today, musicology's three broad subdisciplines are about equally important in terms of the volume of research activity.

**Özet.** Sistematik müzikoloji, müziğin belirli görünüşlerinden daha çok genel olarak müzikle ilgilenen müzikolojinin alt disiplinleri için asıl olarak Orta Avrupa'da kullanılan şemsiye bir terimdir. Bu makale, kavramı uluslararası akademik müzik araştırmacılarına İngilizce açıklamayı amaçlar. Bilimsel sistematik müzikoloji (ya da *bilimsel müzikoloji*) aslen ampirik ve veri-yönelimlidir; ampirik psikoloji ve sosyoloji, akustik, fizyoloji, sinir bilimleri, bilişsel bilimler, hesaplamayı ve teknolojiyi kapsar. İnsan bilimleri sistematik müzikoloji (ya da *kültürel müzikoloji*) felsefi estetik, kuramsal sosyoloji, göstergebilim, yorumbilgisi, müzik eleştirisi, kültürel çalışmalar ve cinsiyet çalışmaları gibi disiplinleri ve paradigmaları kapsar. Sistematik müzikoloji disiplini, kardeş disiplinler olan tarihsel müzikoloji ve etnomüzikolojiye göre daha az bütünseldir: kapsamı ve yöntemleri daha fazla çeşitlidir ve hem akademik hem de pratik olarak müzikoloji dışındaki akraba disiplinlerle daha fazla ilişkili olma eğilimindedir. Sistematik müzikolojinin bu çeşitliliği bir yere kadar onu oluşturan altdisiplinlerin *sistemi* içindeki disiplinlerarası etkileşimlerle telafi edilir (*sistemik müzikoloji*). Sistematik müzikolojinin Avrupa'daki kökenleri antik Yunan'da bulunabilir. Tarihsel müzikoloji ve etnomüzikoloji çok daha genç disiplinlerdir ve bu üç disiplinin görece önemi son birkaç yüzyıl boyunca önemli ölçüde inişli çıkışlı bir seyir izlemiştir. Bugün, müzikolojinin bu üç altdisiplini araştırma etkinliğinin hacmi anlamında hemen hemen eşit önemdedir.

I argue that the humanities and the sciences are about equally important both for musicology, as they are for scholarship and universities in general: culture is no more or less important than technology for human quality of life and human survival. But institutions that bear the label “musicological” (departments, societies, journals, conferences) still tend to focus almost entirely on historical musicology. The future development, and perhaps survival, of musicology will depend on the degree to which musicological institutions can achieve a balance between musicological subdisciplines, celebrate their diversity and promote constructive interactions between them.

**Keywords:** Musicology, systematic, systemic, empirical, scientific, cultural, historical, ethnomusicology, humanities, sciences, acoustics, psychology, sociology, philosophy, computing, physiology, cognition, interdisciplinary

İnsan bilimleri ve *bilimlerin* genel olarak akademik arařtırmalar ve üniversiteler için olduđu gibi müzikoloji için de yaklaşık eşit önemde olduğunu öne sürüyorum: kültür insan yaşamının kalitesi ve devamı için teknolojiye daha fazla ya da daha az önemli değildir. Ancak “müzikbilimsel” etiketini taşıyan kurumlar (bölümler, topluluklar, dergiler, konferanslar) hala neredeyse tamamen tarihsel müzikoloji üzerine odaklanma eğilimindedir. Müzikolojinin gelecekteki gelişimi ve belki de varlığının devamı müzikbilimsel kurumların müzikbilimsel alt disiplinler arasında bir denge kurma, onların çeşitliliklerini olumlama ve aralarındaki yapıcı etkileşimleri destekleme derecesine bağlı olacaktır.

**Anahtar kelimeler:** Müzikoloji, sistematik, sistematik, ampirik, bilimsel, kültürel, tarihsel, etnomüzikoloji, insan bilimleri, bilimler, akustik, psikoloji, sosyoloji, felsefe, hesaplama, fizyoloji, biliş, disiplinler

## 1 Introduction

Musicology is the study of music. Leading music encyclopediae such as the *New Grove Dictionary of Music and Musicians* (2001, “Musicology”) and *Musik in Geschichte und Gegenwart* (1997, “Musikwissenschaft”) offer a broad, all-encompassing account of musicology. They suggest that musicology today covers *all* disciplinary approaches to the study of *all* music in *all* its manifestations and *all* its contexts, whether they be physical, acoustic, digital, multimedia, social, sociological, cultural, historical, geographical, ethnological, psychological, physiological, medicinal, pedagogical, therapeutic, or in relation to any other musically relevant discipline or context. In this article, I generally use the term musicology in this broad sense.

The length and openness of this list does not imply that “anything goes” in musicology, since the highest standards of international scholarship can be, and indeed should be, pursued in every one of its many subdisciplines, however large or small. But it does imply that any serious academic discipline that addresses musical questions or attempts to explain musical phenomena can, and should, be regarded as a part of musicology.

The term “systematic musicology” is used mainly in central Europe and mainly in the German language (*Systematische Musikwissenschaft*). The present text aims to present and explain the concept of systematic musicology in English to international music scholars, many of whom do not regard themselves as “systematic musicologists” but would be regarded as such by German musicologists.

The literature that discusses the concept of systematic musicology in both German and English often has the character of a performance without an audience. Outsiders find it quite abstract (too many generalities, not enough examples) and therefore diffi-

cult to read. Insiders - the systematic musicologists themselves - find the contents either obvious or dubious, and a metadiscussion of their discipline does not usually help them to make progress in the specific research areas that interest them. In the present article, I try to avoid both of these pitfalls: my account aims to be both comprehensible to outsiders in that it explains fundamentals before proceeding to abstractions, and interesting to insiders in that it puts old ideas in a new light and explores the implications of musicology's structure for its future development.

The concept of systematic musicology has been defined in many different ways, of which some are mentioned below. It may be regarded as a subdiscipline of musicology that is primarily concerned with music in *general*: what is music, what is it for, and why do we engage with it? By contrast, the sister disciplines of historical musicology and ethnomusicology are primarily concerned with *specific* manifestations of music: styles, genres, periods, traditions, and individual pieces or musical events. These two broad approaches complement each other: historical musicology and ethnomusicology may be regarded as the *bottom-up* components of musicology, while systematic musicology is the *top-down* component.

Pinker (1997) famously compared music with cheesecake: something that people enjoy although it has no obvious adaptive (evolutionary survival) function. Stretching this analogy in the direction of musicology and its internal structure, systematic musicology may be regarded as a discipline that poses general questions about cheesecakes such as their contribution to a balanced diet or their role in human rituals (meetings, parties, celebrations), while historical musicology and ethnomusicology survey the detail and diversity of cheesecakes from different cultures and historical periods.

The commonalities of and differences between the epistemologies and methodologies of different areas of musicology have been discussed by Huron (1999) and Honing (2006). Because the epistemologies and research methods of the humanities and the sciences are so fundamentally different, researchers tend to identify themselves with only one of the two, and to be regarded as experts in only one. Productive communication between the two traditions is difficult and surprisingly unusual. But since the two traditions often address similar research questions - such as for example the ancient question of the nature of musical emotion and meaning - there is a clear need for interdisciplinary interaction between them.

Systematic musicology involves both sciences and humanities. In the following, I will refer to these subdivisions of systematic musicology as *scientific musicology* and *cultural musicology* respectively. The fundamental epistemological and methodological differences between these two subdisciplines, and the recent expansion of research in both, mean that no individual modern researcher can claim to be an expert in both. Interdisciplinarity is best achieved by personal interaction between individual researchers from the two traditions. The Conferences on Interdisciplinary Musicology aim to promote interdisciplinary collaborations among all subdisciplines of musicology, including historical musicology, ethnomusicology, scientific musicology, cultural musicology, and musical practice.

This article is primarily about scientific musicology. By "sciences" I mean disciplines that promote *scientific method*, which I assume to be based on *data-oriented empirical research*. Thus, I am using the word "science" in the modern English sense of natural sciences and not in the Latin sense of all knowledge or scholarship. There is

no sharp dividing line between sciences and humanities; social sciences such as sociology, anthropology, economics, geography and linguistics are generally mixtures of sciences and humanities.

This article does not attempt to survey the long and complex history of systematic musicology. That would involve comparing approaches to similar questions in three main periods: ancient and medieval (“history of music theory”), European scholarship since the Enlightenment, and international research since the Second World War. Instead, I aim to give a current and balanced account of scientific musicology - musicology that is primarily scientific in its approach and methods. Scientific musicology will be presented in both its disciplinary and its historical context, and I will consider the implications of recent developments in scientific musicology for musicology as a whole.

My text begins with an account of the structure of systematic musicology (including scientific musicology) in the context of musicology generally, followed by an account of its (their) history. I proceed to consider the relationship between humanities and sciences, both generally and within musicology, before finally turning to the implications of my conclusions for the future of musicology.

## 2 The Structure of Musicology

In Central Europe, musicology is often regarded as comprising three largely independent subdisciplines: ethnomusicology, historical musicology, and systematic musicology. The boundaries of these subdisciplines are not clearly defined, but some generalizations are possible:

- Ethnomusicology and historical musicology tend to focus on specific manifestations of music: pieces, styles, and traditions. The research may address either the notated repertoire (regardless of its performance), specific performances (regardless of their notation, if any), or both. Historical musicologists and ethnomusicologists study the cultural and social contexts of music, and their methods and approaches are largely borrowed from disciplines such as history and cultural studies (mainly humanities) and cultural anthropology (a mixture of sciences and humanities). Ethnomusicology attempts to encompass all music, whereas historical musicology focuses on the notated music of Western cultural elites.
- By contrast, systematic musicology tends to focus on music as a *phenomenon*, in the sense of something that can be observed to happen repeatedly in different ways and contexts.
- All three subdisciplines address the *contexts* in which music is made and experienced, but they focus on different aspects of those contexts - physical, human, social, cultural, geographical, historical, and so on.

In recent decades, the expansion of research in areas such as *cultural studies* (cf. the “new musicology” of the 1990s; e.g. Kramer, 1995) and *popular music* (e.g. Cook, 1998) has challenged the tripartite model. Questions of subjectivity and gender can be

studied either from the point of view of humanities (history, literature) or (natural and social) sciences (psychology, sociology), and vary considerably from one culture to another (the domain of ethnomusicology). Popular music and jazz can be studied either from the point of view of history and notated artefacts; perception, sociology, and media representation; or subculture and ethnicity. Individual researchers in these areas tend to be clearly associated with one of the three traditional subdisciplines - which confirms the validity of the tripartite model, but also points to a need for stronger interaction and more equal balance between the three traditional subdisciplines within the cultural paradigm (e.g. Parncutt, 2002).

Systematic musicology can be further broken down into two parts corresponding to the *humanities* (*Geisteswissenschaften*, including cultural studies and the theoretical social sciences) and the *sciences* (*Naturwissenschaften*, including empirical social sciences and technology):

- *Scientific systematic musicology*, or simply *scientific musicology*, is primarily empirical and data-oriented. It involves empirical psychology and sociology, acoustics, physiology, neurosciences, cognitive sciences, and computing and technology. These various strands are united by epistemologies and methods that are characteristic of the sciences.
- *Humanities systematic musicology*, or *cultural musicology*, is primarily subjective (introspective, intuitive, intersubjective) and philosophical (based on analysis of musical texts, behaviour and experience). It involves philosophical aesthetics, theoretical sociology, semiotics, hermeneutics, music criticism, and (non-historical and non-ethnological aspects of) cultural and gender studies (including the “new musicology” of the 1980s and 1990s). These various strands are united by common epistemologies and methods that are characteristic of the humanities.

In the remainder of this article I will refer primarily to scientific research in systematic musicology (scientific musicology). The reason is not only that I am myself a scientific musicologist, but that cultural musicology, as defined above, is more closely related to historical musicology than to scientific musicology, and may for practical purposes be considered part of “musicology” in the narrow sense of historical musicology:

- Leading international representatives of cultural musicology are often also historical musicologists, and vice-versa.
- Research in cultural musicology is often presented within the conferences and journals of historical musicology.
- Both historical and cultural musicologists are humanities scholars with broadly similar ways of thinking and research methods (at least by comparison to their scientific counterparts).
- Both groups focus largely on the music history of western cultural elites. In spite of the changes that their discipline has experienced in recent decades, their main aim is still to understand the great works of the Western canon and their historical, social and cultural contexts.

## 2.1 The History of Structural Divisions in Musicology

The term “systematic musicology” was famously introduced by Adler (1885), who suggested that musicology be divided into a historical and a systematic branch. In so doing, he was following the example of other, more established disciplines such as law and theology, whose subdisciplines could be neatly divided into historical (*diachron*) and non-historical or systematic (*synchron*) aspects.

For Adler, the historical aspect of musicology was organised according to periods, peoples, and schools of composition, whereas the systematic aspect aimed to discover the most important “laws of music”. The revolution in musical thought that accompanied the rise of atonal composition in the early 20th Century, coupled with a growing awareness of the diversity of the world's music and the aesthetic value of non-Western musics, all but ended the dream of universal “laws of music” analogous to, say, the laws of physics - which of course were subject to a similar shake-up at about the same time. These intellectual developments, coupled with the persecution and emigration of German (systematic) musicologists during the Nazi period, led to a weakening of, and identity crisis in, systematic musicology after the Second World War (Holtmeier, 2004; Leman & Schneider, 1997; Motte-Haber, 1997). Although historical musicology suffered from similar problems, it had been stronger before the war and was therefore able to recover more quickly.

The distinction between systematic and historical musicology also corresponds to that between *nomothetic* and *idiographic*. Introduced by Windelband (1894) to account for the difference between the role of “objective” “natural” “laws” in the sciences (e.g. physics) and the role of subjectivity (human experience) in the humanities and cultural studies (e.g. history), the distinction between nomothetic and idiographic may be traced to Kant's (1781) distinction between *generalizing* and *specifying*. Nomothetic disciplines tend to generalize, deriving “laws” (or at least patterns or repetitions) to explain “objective” phenomena, often by quantitative means - which is still typical of today's sciences. Idiographic disciplines tend to specify: to develop detailed descriptions to understand “subjective” phenomena, usually by qualitative means - which is still typical of today's humanities.

Today, systematic musicology is sometimes regarded as “basic” research about music, or research about music's “foundations”. This idea is reflected for example in the name *Richter Herf-Institut für musikalische Grundlagenforschung*, a department of Universität Mozarteum Salzburg, one of Austria's three music universities. Terms such as “basic” and “foundations” may be misleading in this context because they suggest that systematic musicology is somehow more important or more musicologically central than historical musicology or ethnomusicology. It would be equally misleading to suggest the opposite, as Adler (1885) did: after carefully dividing musicology into a historical and a systematic part, he claimed - without justification - that the systematic part is “based on” the historical part, implying that the historical part is more fundamental. It would be truer to say that there is no intrinsic difference in importance between *specificities* and *generalities*: they are the two ends of a single spectrum. Moreover, in the case of musicology at the beginning of the 21st Century, it would appear that a balance has been reached between research about specificities and research about generalities: it would be difficult to demonstrate that the sum total of all research in ethnomusicology and historical musicology was greater or smaller

than the sum total of all research in all scientific and humanities subdisciplines of systematic musicology. Instead it appears that *all* academic disciplines including musicology thrive on interactions between bottom-up specificities and top-down generalities (remembering that the word “top” in this sentence is in no sense superior to the word “bottom”). An important prerequisite for such interaction is the nominally equal status of the participating subdisciplines.

### 3 The Structure of Systematic Musicology

Of the multitude of attempts to define the discipline of systematic musicology, none has clearly prevailed. Dahlhaus summarized the situation as follows:

The concept of systematic musicology designates a discipline - or a collection of disciplines - about which, in the general consciousness of the musically and even musicologically educated, almost nothing is definite: neither the premises upon which it is based, nor the aims that it pursues, nor the boundaries that are drawn around it, nor the methods with which it operates. It is not even clear whether it should exist at all. (1997: 25, my translation)

Today, systematic musicology is a diverse collection of largely independent subdisciplines, many with their own experts, schools of thought, international conferences, societies, and journals. The subdisciplines vary widely in age (from decades to millennia) and scholarly orientation (humanities, sciences, musical practice). There is some disagreement about what belongs to systematic musicology and what does not, which is not surprising given that the discipline (like any other) is constantly developing. The following is an attempt to summarize the current views of systematic musicologists:

- The subdisciplines of music acoustics, psychology, sociology and philosophy (including aesthetics, which in turn includes empirical aesthetics) have traditionally been regarded as central to systematic musicology - which does not mean that other aspects of systematic musicology are any less important.
- The subdisciplines of music physiology and medicine (including the musical neurosciences), music computing (including music information retrieval), and music and media (a topic with electroacoustical, computing, sociological, psychological, and cultural aspects) have a shorter history than acoustics, psychology, sociology and philosophy, but are growing more rapidly.
- Music theory and analysis are sometimes regarded as part of systematic musicology, sometimes as separate disciplines, and sometimes as musical fundamentals (*Propädeutika*). They are core disciplines of musicology in the sense that they lack parent disciplines outside musicology. Semiotics may be regarded as a mix of music theory, analysis, and cultural studies.
- The practically oriented fringes of musicology - music medicine, music therapy, and music education - are more closely linked to systematic musicology than to historical musicology or ethnomusicology. To the extent that they are

theoretical and research based, they may be regarded as belonging to a broad definition of musicology.

In Germany and central Europe, systematic musicology is represented by the *Fachgruppe Systematische Musikwissenschaft* of the *Gesellschaft für Musikforschung* and by the International Cooperative in Systematic and Comparative Musicology. The range and extent of systematic musicology in today's German scholarship is reflected by departments and researchers such as:

- Gießen (Bullerjahn): film music and compositional processes
- Halle (Auhagen): motor performance and musical acoustics
- Hamburg (Schneider): acoustics and psychoacoustics
- Hannover (Behne): preferences and attitudes
- Hannover (Kopiez): performance and emotion
- Köln (Neuhoff): sociology of music
- Köln (Reuter): acoustics and psychoacoustics
- Köln (Seifert): computational modeling
- Würzburg (Lehmann): performance and improvisation

At the 2005 Business Meeting of the Music Cognition Group of the Society for Music Theory (USA), participants described work that they were currently doing in music cognition and mentioned the following topics: untrained listeners' responses to silence and expectation, the teaching of aural skills, “impossible rhythms”, “gastromusicology” (food as a metaphor for music), the phenomenology of electronic music, how organists emphasize different polyphonic voices, the dynamic perception of form, syntax in non-Western music, computational modeling, melodic attraction, timbre, phenomenology, rhythm in dance music, early 20th-Century music, auditory scene analysis, the historical contingency of aural perception, intonation, beat and meter perception, computational modeling of counterpoint, Schenker, similarity perception, aural-skills acquisition, and short-term vs. long-term musical memory, and “musical forces”.

International opportunities for studying systematic musicology that address more than one aspect of systematic musicology (such as acoustics and psychology) in depth include the following:

- Austria: Department of Musicology, University of Graz
- Belgium: International Summer School in Systematic Musicology
- Finland: Department of Music, University of Jyväskylä
- Germany: Department of Music, University of Hamburg; University of Music and Theater, Hannover; Department of Musicology, University of Halle
- USA: Department of Music, University of California at Los Angeles

A clear definition and description of the discipline of systematic musicology that clarifies the links between its subdisciplines can be found in the course requirements

of the Department of Music, University of Hamburg (my translation from the departmental homepage):

Systematic musicology addresses the physical, biological, psychological, cultural and social foundations of music, its manifestations, and its effects. It explores the modalities and conditions of musical creation, performance, and reception. It compares the structure, realisation and function of music across societies and cultures. Thus, the aim of systematic musicology is a general, anthropologically based theory of the structure and function of music, plus the methodological tools necessary to achieve that aim. Systematic musicology employs empirical and experimental methods to explore how physically measurable sound processes (acoustics) are picked up by the auditory system, neurally processed, and consciously perceived (psychoacoustics, music psychology). It then investigates the reception and aesthetic evaluation of music (empirical music aesthetics), taking into account the social and cultural context (music sociology, ethnomusicology / comparative musicology). The status and roles of women and men in music and musical culture (gender studies) are investigated in the context of music sociology and music psychology. Specific manifestations of music, their meaning, and their function are investigated in the subdisciplines of musical semiotics and semantics, music aesthetics, music sociology, and - transculturally - in comparative musicology, in which inter-ethnic relations, issues of acculturation, and musical subcultures are especially important. Systematic musicology also addresses modern forms of popular music, the conditions of its production and reception, and the role of technical media. The subdisciplines of music theory, music philosophy, and the study of musical instruments link together systematic and historical musicology. The empirical methods of systematic musicology are similar to those of the natural and social sciences, and its specific theory, methods and history are topics for reflection at all levels of study and research.

In spite of the clarity, breadth and appeal of this account, it is also problematic. First, it does not clearly separate systematic musicology from ethnomusicology. For decades, ethnomusicology has developed internationally as an independent discipline. Second, it seems to include just about every aspect of musicology that is not normally addressed by historians; systematic musicology is presented as a convenient receptacle for all topics that historical musicologists might prefer to ignore. Third, it situates “modern forms of popular music” within systematic musicology. But popular music and jazz can be, and are, studied within all three main subdisciplines of musicology: historical musicology, systematic musicology, and ethnomusicology. Any form of music, whether it be American popular music of the 1970s, the diverse musical styles of (traditional or modern) Australian aborigines, or the choral polyphony of the European Renaissance, can be studied using the “systematic” research methods of sociology or anthropology. Systematic musicology is defined in terms of its *parent disciplines* - not specific musical styles.

Instead of forcing the study of popular music to fit the tripartite model of musicology, it may be more appropriate to regard it as a separate, independent subdiscipline - consistent with the size, success, and internal diversity of the International Association for the Study of Popular Music and associated journals and conferences. Similarly, jazz research has established itself as an independent subdiscipline

(International Society for Jazz Research, Leeds International Jazz Conference). While the disciplines of jazz research and popular music are related to each other, they are also related to the sociology and psychology of music, ethnomusicology, historical musicology, music theory, music performance research, and so on.

Since systematic musicology is so diverse and difficult to define, some may question whether it can be regarded as a “discipline” at all. What are the defining attributes of a “discipline”? The Wikipedia page entitled “List of academic disciplines” included the following text (19.4.07):

An academic discipline, or field of study, is a branch of knowledge which is taught or researched at the college or university level. Disciplines are defined and recognised by the academic journals in which research is published, and the learned societies and academic departments or faculties to which their practitioners belong.

Dahlhaus defined “discipline” somewhat differently:

A sketch of systematic musicology, if its right to exist as a discipline is at all plausible, must therefore first outline the concept of music upon which it is based, second justify its specific academic aims, third explain what “systematic” means in terms of methodology, fourth clarify its relationship to history (which is accepted as the complementary antithesis of systematic musicology) and fifth investigate the traditions that, over the centuries and even millenia, have influenced concepts of what systematic musicology is - the theory (contemplation) of tonal systems, the aesthetics of sounding artworks or the experimental investigation of communicational processes. (1997: 25, my translation)

While all such criteria are arbitrary, they are fulfilled by systematic musicology about as well as by any other discipline, as Dahlhaus's text later demonstrates. Moreover, the subdisciplines that make up systematic musicology satisfy similar criteria. Music psychology, music acoustics and music computing may be considered to qualify even better for disciplinary status than systematic musicology, because they are more homogenous and individually maintain well-respected international conferences, societies and journals whose titles reflect their disciplinary labels.

#### 4 Systematic versus “Systemic” Musicology

One might argue that *any* field of research (or at least its methods) should be systematic - that is, orderly, methodical and thorough. The most important characteristic of systematic musicology may not be a “systematic” approach, whatever that means exactly, but its *system* of subdisciplines, including their various methods and associated ways of thinking. A system is commonly defined as a complex, unified whole whose parts interact with each other. If systematic musicology is a complex interacting system of subdisciplines, it might best be called *systemic* musicology (Jiranek, 1993; Schneider, 1993). According to Fricke:

...music can be explained through the interaction among a large number of elements [*Wirkungsgrößen*] which - as different as they are from each other - all belong somehow to musicology, because they are needed to illuminate the phenomenon of music. 'Systemic' [*systemisch*] is an appropriate label for such a network of interactions [...] This is the interdisciplinary approach that is increasingly being promoted and supported by granting agencies. All "combination disciplines" such as music psychology, psychological acoustics and music computing are at home here. The establishment of connections, and especially the recognition that phenomena are integrated in a network of interdependencies, is a central feature - and asset! - of these disciplinary combinations. [...] Thus, they are predestined for systemic thinking and systemic research. [...] But there is yet another level: the cognitive interplay of mental processes [...] in a phenomenon like music enables it to be compared to the cognitive interplay of mental processes in language, poetry and other artistic forms of expression. (2003: 13-14, my translation)

In the following extended passage, Elschek takes the "system" idea further, poignantly expressing what many systematic musicologists consider to be special about their discipline:

Systematic musicology is an area of study that places particularly high demands on its researchers. As a rule, "systematic" researchers do not limit themselves to merely collecting and analysing data, nor do they focus on purely technical questions. Instead, their profession addresses basic questions about the existence, origin and development of music in all its complex interactions and manifestations; about anthropological, ethical, aesthetic and psychological constants and variables; about what determines sound and what affects society; and about the specific effects of music and consequences of musical phenomena. It is not possible to separate the individual from the social, the music-specific from the culturally dependent; instead, these must be investigated in all their internal complexity. The complexity of the problems addressed by systematic musicologists means, as a rule, that their approach is more multidisciplinary than monodisciplinary, and that they are more interested in specific questions than in the classification, autonomy, or "purity" of their discipline. This broad, open and interdisciplinary approach to research is one of the essential characteristics of systematic musicology.

In this sense, I regard systematic musicology not so much as a system of different disciplines but as an approach to describing the complex phenomenon of music and the relations between its dimensions (perceptual, aesthetic, social etc.), both analytically and holistically. A diversity of musical manifestations and questions are addressed by a palette of research methods that enable the investigation of individual sounds, the understanding of musical structures, psychosocial influences on their reception, and the different functions of and responses to music in its cultural context. The discipline is not so much "systematic" in the sense that it comprises a system of subdisciplines, but that it allows researchers to select the most appropriate methods for a specific question from a range of different disciplines. This presupposes an acquaintance with many different fields of knowledge and an ability to apply many different methods and procedures. These demands mean that systematic musicology is inherent difficult. The discipline is forced to take a broad view of large disciplinary areas and at the same time to address specific issues within individual disciplines.

Results from different disciplines must be reconciled and “systematically” related to each other. In this sense, systematic music research involves not only different approaches - experimental, other empirical (field research, questionnaires etc.), aesthetic, semiotic and so on - but also the ability to integrate and to abstract from individual findings. The resultant musicological synthesis is not biased toward a specific discipline [...] (1993: 310-311, my translation)

Elschek makes the interesting point that systematic musicology may be regarded as an approach rather than a discipline, an idea echoed by several other scholars. While Elschek's focus on multi- and interdisciplinarity is undeniably true for *some* research in systematic musicology, it is also problematic:

- Most of today's research in systematic musicology is not interdisciplinary as suggested by Elschek, but is confined to specific subdisciplines such as music acoustics and music psychology. But that does not make it any less valuable or less likely to qualify as “systematic”.
- While Elschek's arguments may help to define the boundaries of the discipline and to foster a strong disciplinary identity, they tend to be too abstract to impact on specific research projects.
- Between the lines, Elschek's account suggests that systematic musicology is somehow superior to its sister disciplines historical musicology and ethnomusicology. Whether this is Elschek's intention or not, I think it is important to refute any such claim. Academic disciplines vary along many dimensions, whose relative importance always depends on the observer's standpoint. The various subdisciplines of musicology have different objectives, methods and values that are tuned to each other within each subdiscipline, but are not necessarily valid when applied to other disciplines. It is difficult to evaluate one discipline from the point of another discipline that has different traditions, methods and ways of thinking.

The following quote from Motte-Haber seems more realistic:

Every overview of the subdisciplines of systematic musicology that has recently been presented reflects a strong need for order and an intense desire to trap the concept of music within a network of functional connections. Such projections of a need for security are to be avoided. Research in systematic musicology should be presented as it is actually done, or can be done. For this practical orientation is the least positivistic; it is the most open and does not classify and evaluate questions in advance. It does not inhibit future development. The disciplines are presented that are currently taught or researched, along with their connections. Even when it is not the intention to show a clear hierarchy of more or less important disciplines, a clear distinction between centre and periphery will arise that reflects the urgency of problems and the ease with which they can be addressed. (1997: 15, my translation)

In balance, the term *systemic* is probably describes the discipline more appropriately than *systematic*. But in truth neither term is very satisfactory. Other possible terms such *nomothetic* and *synchron* seem destined to bamboozle the general public as well

as scholars in other disciplines. The term *empirical* means based on experience, which applies to almost all scholarship; it is nevertheless catching on as a label for data-oriented empirical research in musicology (cf. Clarke & Cook, 2004). Although the term *scientific* perhaps most accurately describes the contents of the discipline, the expression *scientific musicology* seems unlikely to find general acceptance in the near future, if only because the long cold war between the humanities and the sciences during the second half of the 20th Century gave the word “scientific” a negative connotation in musicological circles.

## 5 Systematic Musicologists

In the real world of international scholarship, a discipline is defined by the interests, knowledge, methods and interactions of its experts. The size of a discipline is limited by the knowledge capacity of individual researchers. According to Ericsson (1996) it takes about 10 000 accumulated hours of work over about 10 years to become an expert in any field. This presumably applies as much to systematic musicologists as it does to chess players or architects.

How do systematic musicologists spend this time? What kind of qualifications do they acquire? The diversity of the discipline's internal structure makes this a difficult question to answer. The question may best be answered by studying the qualifications of existing, recognized systematic musicologists. To be recognized *by* systematic musicologists *as* a systematic musicologist it is generally necessary to satisfy *all four* of the following criteria:

1. *Basic musical skills* in either music performance or music theory. In this respect, systematic musicologists are like other musicologists. Of course the music in question need not be Western (although it usually is, because most musicologists are Western - if only because Western universities are better funded).
2. A relevant bachelors or masters degree that involves mainly coursework (rather than research) but also demonstrates the ability to apply current research methods in systematic musicology. This criterion may be satisfied in two different ways:
  - The most common way is to obtain a degree in one of the “parent disciplines” of systematic musicology: physics, psychology, sociology, philosophy, computing, physiology, etc. This qualification is not specifically musical or musicological, and tends to determine the area of systematic musicology to which a scholar will later belong (e.g. music acousticians tend to be qualified in physics). It gives the researcher a thorough knowledge of current research *methods* and *theories* that are appropriate for tackling systematic-musicological questions in a given area.
  - At some universities, it is possible to become qualified in systematic musicology directly (e.g. the masters degree in Graz) or in one of its subdisciplines, e.g. music psychology (e.g. the masters degree

in Keele). Until such qualifications become more widespread, this route will remain the exception rather than the rule. Such qualifications tend to provide a less thorough grounding in research methods than a regular undergraduate qualification in one of systematic musicology's parent disciplines, but they may make up for that by making stronger connections between the methods and findings of systematic musicology and the rest of musicology.

3. A *Ph.D.* (doctorate) in (a subdiscipline of) systematic musicology. A doctorate is a university's way of saying that a person has made a significant contribution to a specific field. In countries where an additional qualification, the *habilitation*, is a prerequisite for a professorship, a habilitation in the area of systematic musicology may be considered as a further prerequisite for recognition as a systematic musicologist (since in those countries the standard of the doctorate may be lower than that of the Ph.D. awarded in other countries).
4. *Publications* in one area of systematic musicology, e.g. music acoustics or music psychology, in a range of journals. This may be regarded as confirmation from a range of sources that the person has made a significant contribution to systematic musicology. The publications may appear either in recognized systematic musicology journals (whose content is normally determined by a peer-review procedure) or in non-musical journals (such as regular acoustics or psychology journals). Incidentally, articles on systematic musicology seldom appear in "musicology" journals, which almost always focus on *historical* musicology.

A systematic musicologist's qualifications do not always belong to the same area of systematic musicology as his or her publication(s). Sometimes, a broader view of systematic musicology can be achieved by covering more than one area. For example, the author has undergraduate bachelor's degrees in science (physics) and music, his Ph.D. was officially spilt between three disciplines (psychology, music, and physics), and his publications are mainly in music psychology.

Today, most qualifications in "music" or "musicology" are primarily qualifications in *historical* musicology, because most musicology curricula and programs are historically dominated. The relatively few exceptions include Graz, Hamburg, Jyväskylä, Sheffield, and UCLA. From the point of view of systematic musicology, a qualification in (historical) musicology (or ethnomusicology, or music performance) is of course helpful and desirable, but not a necessary precondition for good research in systematic musicology or for peer recognition as a systematic musicologist - just as a qualification in systematic musicology is not a precondition for recognition as an ethnomusicologist or historical musicologist.

## 6 The History of (Systematic) Musicology

The history and changing roles of systematic musicology are best understood in the context of Western musicology as a whole, in the sense of any scholarship about any music (Parncutt, 2005). The structure of musicology has changed markedly and repeatedly during its long history. Table 1 is an attempt to summarize that history by sketching the distribution of subdisciplines in three key historical periods. The table is constructed so that, as far as possible, humanities are on the left, sciences on the right, and mixtures of the two in the middle. The larger the distance between two disciplines in the table, the more different are the approaches and ways of thinking of their proponents and the more difficult is interdisciplinary collaboration.

**Table 1.** Sketch of the structure of musical scholarship in three different historical periods.

<b>Antiquity and Middle Ages: Antecedents of music theory and systematic musicology</b>							
mathematical, philosophical, astronomical, mystical theories of acoustics, intervals, emotions							
<b>19th Century: Musicology as music history plus subsidiary or auxiliary disciplines</b>							
historical musicology				comparative musicol.	music theory	systematic musicol.	
<b>The present: Musicology as all disciplinary approaches to all questions about all music</b>							
history	pop jazz	ethnology	analysis	theory	sociology	psychology	acoustics
						physiology	
						media	
aesthetics, cultural studies, gender						computing	
philosophy							

**Origins of systematic musicology.** Like its parent disciplines physics, physiology, psychology, sociology, and philosophy, systematic musicology (applying Adler's 1885 concept retrospectively) has ancient roots. Not only Greece, but also the ancient cultures of China and India developed theories of scales, intervals, and emotion, and related them to mathematics and astronomy. The ancient Greeks developed theories of musical affect, expressed musical intervals as ratios of the lengths of vibrating strings, and sometimes assumed that both were related to the movements of the stars - an idea that captured the imagination of generations of Medieval and later music theorists. The Quadrivium - a kind of mathematical philosophy taught at medieval European universities - included not only arithmetic, geometry, and astronomy, but

also “music”: the sounds and intervals supposedly produced by the planets were compared with ratios of string lengths on a Pythagorean monochord. Although this theory makes little sense today, the idea that musical intervals can be explained physically or scientifically may now be seen as an important stage in the historical development of music theory; and the creation, questioning, and eventual rejection of such ideas was part of that long historical process that brought forth modern systematic musicology. These early examples of musical scholarship are not related to other aspects of modern musicology; they tended to be neither historical (since they were confined to the music and the concepts of music of the time) nor ethnological (since they were confined to the music of a single region). Thus, from ancient Greece to the Middle Ages, musical scholarship was entirely “systematic”.

**Origins of historical musicology.** European historical musicology emerged during the Enlightenment (17th-18th Centuries). Driven by ideals of rationality and progress, enlightenment historians envisaged a universal history of the human race with subdisciplines such as history of society, history of art and music, history of law, history of trade, and so on. Since that time, both history in general and music history in particular have played an important role in European culture, mentality, and identity. Thanks to the continuing expansion of historical musicology and its role in constructing and reinforcing national identities in 19th Century, the term “musicology” appeared in European languages, and musicology was recognized as an independent academic discipline. The construction and reinforcement of national identities had both positive and negative implications, ranging from cultural creativity and diversification on the one hand to racism, militarism and the First World War on the other.

**Diversification of musical scholarship.** The 18th-Century spirit of enlightenment motivated the parallel development of non-historical aspects of musicology that drew on scientific content and methods, such as theory, acoustics, psychology, and sociology. Adler (1885) constructed a musicology divided into two parts of nominally equal importance: “systematic” and “historical”. However, the historical aspect of musicology continued to dominate.

**Musicology's power structure.** In the 19th and early 20th Centuries, historical musicology was - tacitly or explicitly - considered central to musicology, for the following interrelated reasons:

- Western music was considered aesthetically superior to non-Western music (an idea that is no longer tenable, but evidently still believed by many: Becker, 1986).
- In scholarly contexts, the word “music” was used primarily in the sense of the notated works of the Western canon (Cook, 1998).
- The main task of both musicology in particular and the humanities as a whole was understood, at least implicitly, to document the achievements of white male genius: musicology was implicitly racist and sexist and promoted a concept of genius that conflicts with the findings of modern empirical psychology (Howe, Davidson & Sloboda, 1998).

As a result, the volume of research on the history of Western notated music exceeded the volume of other musically relevant research, and musicology (in the modern, broad sense of all musically relevant research in all university departments and research institutes) was dominated by humanities thinking and by scholars with humanities training. Professors of musicology were generally music historians. Although all of the above arguments have since evaporated and a defensible argument for the dominance of historical musicology within musicology no longer exists, the power structure in institutions that bear the label “musicology” has hardly changed. Music historians tend to have, want, or demand, power over all musicology.

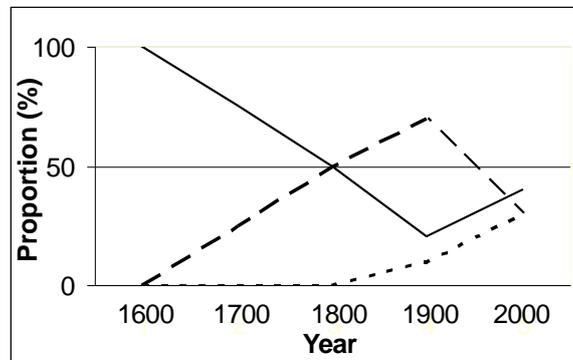
**Emergence of ethnomusicology.** In the colonial period of the late 19th and early 20th Centuries, European interest in non-European cultures, including their music, led to the development of *comparative musicology*, in which Western music is compared with non-Western musics. This later evolved into *ethnomusicology*, which aims to describe and document individual non-Western cultures on their own terms and from the point of view of insiders. These developments happened in parallel with developments in the non-musical parent disciplines of anthropology, ethnography, and ethnology. In both Western Europe and North America, the intellectual leadership for ethnomusicology came out of sociocultural anthropology (which may also be regarded as a product of the colonial era). In Adler's original formulation, comparative musicology was part of systematic musicology, but by the middle of the 20th Century, ethnomusicology had established itself as a separate, third major subdiscipline of musicology with its own methods (that are influenced not only by systematic and historical musicology, but also by non-musical disciplines such as cultural anthropology) and a unique and extensive body of knowledge, most of which is unknown to systematic or historical musicologists (Schumacher, 2003). Ethnomusicologists are often Westerners who have lived in a specific non-Western culture and perhaps learned to perform its music; they can also be non-Western musicians describing their own musical culture in a Western academic context. In recent decades, anthropologists as well as ethnomusicologists have defined themselves increasingly in terms of their research methods and approaches and not by specific kinds of music or musical cultures, which is giving ethnomusicology an increasingly “systematic” character. Ethnomusicological research now addresses all music including Western art music.

**Development and diversification of musicology.** During the second half of the 20th Century, the three main subdisciplines of musicology developed independently. Gradually and consistently, musicology as a whole became bigger, more diverse, and more fragmented. The various subdisciplines of systematic musicology also went their separate ways within their separate international research frameworks. Scientific musicology became more empirical, cognitive and computational (Honing, 2004). Developments in computer technology spurred growth in all areas of musicology, but especially in scientific areas of systematic musicology such as acoustics, psychology, computing, neurosciences, and music and media. Slowly but surely, ethnomusicology and systematic musicology approached, and possibly overtook, historical musicology in the volume and importance of their research output - which is not surprising, con-

sidering that ethnomusicology addresses the music of all continents, and systematic musicology comprises a large number of essentially independent subdisciplines.

Post-modern musicology in the 21st Century is a diverse collection of more or less equally important subdisciplines without a clear overarching structure. Although musicology's subdisciplines (including the subdisciplines of systematic musicology) have become increasingly independent, they are also interacting with each other in new ways.

**Graphical representation.** These developments are summarized graphically in Figure 1. The graph is supposed to give only a rough overview of a long and complex period of academic history; fluctuations at the level of individual decades (e.g. the Second World War) have been smoothed out.



**Figure 1.** Sketch of the history of musicology since 1600 in terms of the proportion of musicology that was systematic (full line), historical (broken) or ethnological (dotted). All values are no more than rough estimates.

Until about 1600, musical thought was almost all “systematic”: it could be classified as theoretical, mathematical, philosophical, aesthetic, acoustical, psychological or sociological. During and following the Enlightenment, historical musicology increased steadily in importance, presumably overtaking systematic musicology around 1800. In 1900, historical musicology was the undisputed focus and centre of musicology. Ethnomusicology (or comparative musicology) emerged during the 19th Century. Although all three areas of musicology grew during the 20th Century, ethnomusicology and systematic musicology grew faster than historical musicology, so the proportion of musicology that was historical declined. At the start of the 21st Century, a reasonable balance has been reached among these three areas of musicology.

Because systematic musicology comprises so many independent disciplines, it is now presumably larger than both historical musicology and ethnomusicology. This in no way implies superiority, but simply reflects the number of people who are motivated to do research within each of a set of subdisciplines, keeping in mind that the boundaries of those subdisciplines are somewhat arbitrary. Systematic musicology remains a somewhat artificial construct of loosely related disciplines that, individu-

ally, are smaller (again, in terms of volume of research) than both ethnomusicology and historical musicology; the latter are more unified and more clearly defined.

**Musicology today.** Musicology has become an extensive, complex, multi- and interdisciplinary network that can be represented in various different ways (Parncutt, 2004). In a general approach, each culture, style or genre might be studied from the point of view each relevant discipline and its specific research methods (Caroline Traube, personal communication, 2006). Each cell in Table 2 represents an interesting field of musicological research. While there has been plenty of research on the music of Western cultural elites, research in the other columns of the table is inconsistent and incomplete.

**Table 2.** Map of possible fields of musicological research obtained by crossing parent disciplines (rows) with musical styles (columns). The choice of labels for rows and columns is necessarily somewhat arbitrary.

supra-disciplines	sub-disciplines	cultures, genres, styles					
		cultural elites		folk/traditional		modern	
		non-Western	Western	non-Western	Western	pop/jazz	avant-garde
musical core	performance	x	x	x	x	x	x
	theory, analysis, composition	x	x	x	x	x	x
humanities	history	x	x	x	x	x	x
	anthropology	x	x	x	x	x	x
	cultural studies	x	x	x	x	x	x
sciences	sociology	x	x	x	x	x	x
	psychology	x	x	x	x	x	x
	acoustics	x	x	x	x	x	x
	computing	x	x	x	x	x	x

**Marginalization of non-historical musicology.** During the second half of the 20th Century, departments of music and musicology tended to ignore the growth in ethnomusicology and systematic musicology and to continue to regard the history of notated Western music as the undisputed central theme of musicology. All other musical topics, including ethnomusicology and systematic musicology, were marginalised -

treated (at least in practice) as peripheral or “auxiliary”. Although the rise of cultural (“new”) musicology in the 1990s increased awareness of Otherness in musical culture, it had relatively little impact on the tendency for historical musicologists to regard other musicologists as musicological Others. This tendency is still, at the start of the 21st Century, surprisingly strong and shows little signs of abating, at least not in the more conservative musicological institutions.

The marginalization of non-historical musicology proceeded differently in Europe and North America. In the following, I attempt a brief analysis of the marginalization of systematic musicology in three arbitrarily chosen regions:

- In the USA and Canada, the analytical study of Western notated music, including aesthetics, became firmly established within a humanities-oriented “music theory” (represented by the Society for Music Theory, see also the journals *Music Theory Spectrum* and *Music Theory Online*), with links to (historical) “musicology” (American Musicological Society). Scientific aspects of musicology such as music acoustics and music psychology usually did not find, or were refused, a place within musical or musicological academia. Only a few universities maintained programs or departments of “systematic musicology” (e.g. University of Washington in Seattle; University of California at Los Angeles; Ohio State University). Meanwhile, music psychology blossomed outside of “musicology” in two quite separate fields - mainly in (cognitive) psychology, represented by the Society for Music Perception and Cognition and the journal *Music Perception*, but also in music education, represented by the National Association for Music Education. Music acoustics was supported by physics departments and the Acoustical Society of America. Ethnomusicology (represented by the Society for Ethnomusicology) developed in almost complete isolation from “musicology” and music theory.
- In British universities, departments of music were somewhat more open to scientific aspects of musicology than their American counterparts. In recent years and decades, several British postgraduate programs in music psychology have appeared (e.g., Keele, Sheffield) with good connections to music departments, and *Psychology of Music* has become the most important British journal in the area of systematic musicology. Music technology is also well represented in British musical academia. But the history of notated Western music has remained the central theme of British musicology.
- In Germany, systematic musicology (in Köln, Halle, Hamburg, Hannover, Magdeburg, Osnabrück and Würzburg) and ethnomusicology (in Bamberg, Köln, FU Berlin, HU Berlin, Göttingen, Halle, Hamburg, Hannover, Mainz and München) have consistently been recognized as an essential component of musicology and hence of any serious *Institut für Musikwissenschaft*. But despite this apparently good intention, non-historical musicology has been marginalized as much as elsewhere. The number and status of professorships in historical musicology continues to exceed the number and status of professorships in systematic musicology and ethnomusicology by a considerable margin. Important decisions within “musicology” are generally made by historical musicologists, since they hold the more important professorships,

are more often heads of musicology departments and are more often consulted by grant agencies such as the Deutsche Forschungsgemeinschaft.

## 7 The Relationship between Humanities and Sciences

The humanities and sciences differ radically in both their epistemologies and methodologies. What does it mean to be “scientific”, both generally and in regard to music? What are the advantages and disadvantages of a scientific approach?

It is not easy to define the difference between humanities and sciences, either in general or relative to music and musicology. The humanities are often regarded as more subjective and the sciences as more objective, but scholars in the humanities and sciences agree that this distinction is never entirely clear-cut. In the real world of modern, international, consensual scholarship, pure forms of subjectivity and objectivity are elusive.

The following account is written from the point of view of the sciences; humanities scholars may argue differently. For reasons that (paradoxically) are explained in this very account, it is reasonable and legitimate for scholars in the humanities and sciences to view the differences between these two overarching disciplinary groups or supradisciplines in different ways. The author is nevertheless striving to achieve an account that is acceptable to both sides - perhaps driven by a naive scientific belief in the existence of a simple, general explanation.

### 7.1 Differences between Humanities and Sciences: Subjectivity versus Objectivity

To a large extent, the difference between humanities and sciences involves the tension between *subjectivity* and *objectivity* in all scholarship. This difference has at least three separate aspects:

- *Subjects and objects of research.* The humanities (*Geisteswissenschaften*) tend to address the creative products of the human spirit (*Geist*). These include architecture, arts, literature, music, philosophy and religion - in short, *culture*. The sciences (*Naturwissenschaften*) tend instead to address the physical and biological environment of human beings - their natural surroundings (*Natur*).
- *Relationship between observer/researcher and subject/object of research.* This relationship tends to be direct in the humanities and indirect or separate in the sciences, and may represent the most important difference between humanities and sciences today. Researchers in the humanities tend to draw primarily on their subjective experience (called *introspection* in psychology). Scientists instead try to separate themselves from their object of research and base their research on “objective” data.
  - Humanities researchers are in more direct and immediate contact with the subjects/objects of their research and in particular with

their *meaning* (in the sense of the meaning of words in language). Thus, the humanities place considerable emphasis on a *hermeneutic* approach when interpreting their sources. However, the hermeneutic idea is also prevalent in the sciences, even if it is not described as such, and may be regarded as common to all good scholarship. For example, a computer model may be refined by gradually adjusting parameter values to optimize the match between data and predictions, and a neural network may settle down into a steady state as the connection strength between neurons is gradually adjusted. In all such cases, the repeated adjustment between particular and general may be regarded as a hermeneutic process.

- Since scientists base their research on *data*, they are concerned with *testing* the relationship between data and the reality they are supposed to measure (*validity*). These tests are often quantitative, that is, they are expressed as numbers, whereas the humanities tend more often to work with words and text as carriers of meaning. Incidentally, the term “exact” as applied to mathematically based sciences such as physics is misleading, given that theoretical physicists routinely neglect terms in mathematical formulations in order to obtain reasonable approximations that have analytic mathematical solutions.
- *Generality of conclusions.* Scientists seek conclusions that are general in the sense that they are independent of the observer - although most would agree that such objectivity is strictly impossible to achieve. In fact, it is absent from quantum theory, in which observation is assumed always to disturb that which is being observed. Moreover, physicists suspect that even Einstein's long-standing theories will someday be replaced by another, equally ephemeral paradigm (Kuhn, 1962). Similarly, scholars in the humanities often consider objectivity to be illusory; conclusions depend not only on the researcher's own subjectivity but also on the historical and cultural context. For that reason, humanities researchers may shun the idea of general conclusions altogether. Instead, they describe, illuminate, and enrich the subjects/objects of their research. Thus, scientists tend to favour *simple, general conclusions* (in the form of imperfect generalizations), whereas humanities scholars prefer *complex, specific accounts*.

Humanities tend to be subjective, and the sciences objective, in all three of these ways. However there are interesting exceptions. For example, modern psychology tends to be subjective in the first way and objective in the second and third; the same applies to music psychology.

## 7.2 Commonalities of Humanities and Sciences

In spite of these sizeable differences between the humanities and the sciences, the two supradisciplines have a similar attitude to many aspects of the nature of knowledge and its acquisition - which may be relevant to the question of how musicology may be

united or made more homogenous. Consider the following three general commonalities:

*The search for “truth”*

**Truth and intersubjectivity.** Neither the humanities nor the sciences assume the existence of an absolute truth that is somehow out there waiting to be found, but instead apply the principle of intersubjectivity and consensus to evaluate the truth content of research findings. When different observers in different contexts at different times converge on a similar conclusion, that conclusion may be said, in this limited sense, to be “true” or a “fact”. The term “intersubjectivity” tends to be associated with the humanities - but it also arguably underlies the peer-review procedure for accepting, rejecting, and revising submissions to academic journals, which tends to be associated with the sciences. In both cases, scholarship and its “truths” are *constructed* by human actors.

**Role of rational argument.** Since the ancient Greeks, scholars have been making claims and supporting them with arguments, in an effort to convince other scholars that they are right. Their colleagues have reacted by presenting counterarguments. The original claims have only been accepted when it became clear - at least within the community in question - that the arguments for the original (or meanwhile modified) claim are stronger than the arguments against it. This is essentially the procedure by which a body of knowledge has grown in all periods of history and in all disciplines, including both humanities and the sciences. The procedure is clearly social, suggesting that academic breakthroughs are never entirely due to individuals, but rather to collective efforts. Since the arguments that support scholarly claims are never completely clear, the claims themselves are never completely clear either, implying that “knowledge” can always be questioned. Thus, both the humanities and sciences are in a constant state of flux.

**Explaining versus understanding.** The idea that the sciences tend to explain whereas the humanities tend to understand is itself associated with the humanities (Dilthey, 1883). But scholars in both the humanities and the sciences devote their lives to trying to *both* explain *and* understand the objects of their research, and to teach their students to do both these things. Clearly, the process of explaining is difficult to separate from understanding. In practice, you cannot have one without the other.

*Understanding relationships*

**Relationships between objects.** Humanities scholars may get the impression that scientists focus on relationships between the objects of their research and not the objects themselves, whereas humanities tend to focus on the objects themselves and neglect relationships between them. But when specific directions within the humanities or sciences are analyzed, neither of these generalizations holds true. For example,

physicists investigate the internal structure of atoms, and historians make comparisons between different historical periods.

**Causality.** From the point of view of the humanities, the sciences seem to be especially concerned with causality and physical or psychological “laws”. But modern scientists often don't see their work that way. Causality is often difficult to demonstrate, and the idea of “laws” contradicts the anti-positivistic spirit that permeates most modern scholarship. But the humanities are often concerned with questions of causality, too. In history, for example, changes in ways of thinking in one period may be assumed, either tacitly or explicitly, to cause social changes in the next; logical positivists such as Hempel (1942) related the explanatory power of a theory to its predictive power (deductive-nomological approach). In semiotics, the meaning of a sign is explained by processes that - supposedly causally, how else? - give rise to that meaning. In fact, any satisfactory answer to the question “why...?” must be about causality - and “why” questions are common to all academic disciplines.

**Predictions.** The ability to make predictions based on research findings is not limited to the sciences, as is sometimes claimed, but common to all disciplines. For example, the idea that one can “learn from history” implies that one can make predictions based on history. Scientific predictions are not generally or necessarily more reliable than predictions in the humanities; consider for example the debate about the future course of environmental change and global warming during the 1990s.

#### *Methodological diversity*

Scholars within the humanities or the sciences are more acutely aware of the diversity of methods and approaches within their own supradiscipline than in other supradisciplines, and may therefore claim that their methods are more diverse than those of the other metadiscipline. In fact, there is a diversity of methods and approaches in both supradisciplines. In both cases, the kind of method or approach depends on the question.

### **7.3 Relative Importance of Humanities and Sciences**

Many believe, or take for granted, that the sciences are somehow intrinsically more important than the humanities. But convincing evidence for this belief is lacking.

- In the 19th Century, the humanities were situated at the centre of the university, because they addressed the central topics of human culture and the human condition. From the point of view of academic content, they are no less central today.
- During the 20th Century, the sciences came to be regarded as the centre of the university, because of the countless technical changes that they enabled and the enormous impact that these had on everyday life in modern societies. The sciences enabled not only significant, widespread improvements in the

quality of life but also military and environmental threats that could eventually lead to the self-destruction of the human race. It is hard to assess the relative importance of the advantages and disadvantages of 20th-Century science.

- At the start of the 21st Century, one might argue that the information sciences (computing) have taken over from sciences and now occupy a central position in academia. Meanwhile, the feeling that the sciences are more important than the humanities is still omnipresent and continues to have an important influence on how the financial resources of universities are divided up. But no-one can formulate a clear reason why the sciences might be *fundamentally* more important than the humanities - or vice-versa. Clearly, *both* culture *and* technology are important for modern humans. One could even argue that culture continues to be more important than technology, for without culture, humanity - as normally defined and understood - would not exist.

This historical background suggests that there is no essential difference in importance between the humanities and the sciences. They are roughly equally important, or at least not clearly unequal in importance - both in general and, as I will argue in the following, within musicology.

## 8 Relationship between Humanities and Sciences in Musicology

When applying these ideas to music, it can help to regard music as a form of communication between a sender and a receiver. The sender can be a performer or composer, and the receiver can be a listener or critic. The sender and receiver can also be the same person (e.g. when performers and composers introspectively examine their experience of their own music). Understood in this way, the sender-receiver model can cover just about all of musicology, from acoustics to cultural studies.

The humanities approach to musicology is subjective in the sense that researchers tend to position themselves *within* the sender-receiver system. The researcher's subjective experience of this system is the primary basis for the construction of descriptions and theories - for without subjectivity, music is essentially meaningless. In British Departments of Music, for example, historical musicologists often perform the works about which they research, and their performance experience directly influences their writings. In a German *Institut für Musikwissenschaft*, historical musicologists are less likely to perform, but their writings are still directly influenced by their listening experience. In both cases, the scores of musical works, and scholars' essentially subjective interpretation of those scores, remain the most important source materials.

In a scientific approach, researchers try to be objective, that is, to place themselves *outside* the sender-receiver system. Descriptions and theories are constructed on the basis of data such as physical measurements, experimental participants' descriptions of their musical experiences, or statistical analysis of musical scores. Since all such measurements and data are subject to bias and random variation, scientists try to

compensate by applying statistical tests. Generality of conclusions is never completely achieved, but scientists assume it can be approached more and more closely when more and more refined research methods are used.

Since both the subjective and the objective approach to musicology have specific advantages and disadvantages, and every approach must be a mixture of both (the difference being one of emphasis or proportion), plausible answers to important musical questions are most likely to be formulated when musicology does not adopt a purely humanities or science approach, but instead strikes a reasonable balance between the two. The location of that “reasonable balance” depends on the kind of question being asked - for example, whether the question concerns music as specific repertoire or music as a general phenomenon.

This does not mean that the distinction between humanities and sciences is superseded or should be abandoned. Quite the contrary: Scholars in the humanities and sciences have quite different backgrounds and training, and it is hardly possible for one person to become thoroughly grounded in both supradisciplines. Instead, researchers should strive for a thorough grounding on one side of the humanities-sciences divide, and then work together with researchers on the other side. This is the best way to do good interdisciplinary research. A constructive cross-fertilisation between the humanities and sciences can work in the following way:

**From humanities to sciences.** From the point of view of the sciences, the humanities are a creative source of well-founded ideas. Because of their essential subjectivity, however, scientists tend to regard these ideas with scepticism or to treat them “only” as hypotheses. But without ideas or important issues - and these often come from the humanities - scientists would have nothing to test. Hence, scientific research often either verifies, disproves, or qualifies findings from the humanities. A pertinent musical example is research on the perception of musical structure, which tends to test and elaborate on humanities-oriented music-theoretical ideas.

**From sciences to humanities.** Results of scientific research often seem trivial to humanities scholars. But occasionally the scientists come up with something really surprising. It may then fall to the humanities to explore the *implications* of that finding. That may involve creatively exploring the richness of relationships between various relevant new and old ideas in various disciplines, and considering those relationships in their modern social and cultural context. The quantitative data that scientific research tends to generate is essentially meaningless without qualitative support, which often comes from the humanities.

The traditional relationship between humanities and sciences within musicology is reminiscent of the modern relationship between philosophy and the neurosciences. Philosophy has a long tradition of debate about the mind-body problem. Modern neuroscientific research has tested many of these philosophical ideas in the laboratory. But the contributions of the neurosciences are incomplete without a thorough philosophical exploration of their implications in broader contexts such as ethics and medicine.

The relative importance of (quasi-) objective and (inter-) subjective approaches to musical scholarship fluctuated considerably during its history:

- Ancient and medieval musical thinkers tended to regard music as a phenomenon rather than as repertoire. Their scholarly methods were antecedents of the musical sciences (*Naturwissenschaften*).
- From the 17th to 19th Centuries, music - like art and literature - was regarded increasingly as repertoire, and the study of musical repertoire was arbitrarily confined to the works of great artists - an important topic of investigation within the burgeoning humanities (*Geisteswissenschaften*). Western music, art, and literature were generally (and often tacitly) considered aesthetically superior to non-Western equivalents. At the same time, research on music as a phenomenon continued and developed rapidly, as the content and methods of the sciences flowed into musicology.
- Early comparative musicology and ethnomusicology blended methods and approaches of the humanities and sciences. Ethnomusicology has always maintained a multi- and interdisciplinary character, although humanities tended to dominate ethnomusicological thinking in the latter part of the 20th Century.
- Considering musicology as a whole, a humanities approach dominated the first half of the 20th Century. In the second half, scientific approaches grew faster than the humanities approaches, such that by the end of the 20th Century they were approaching the humanities in size and importance. However, scientific research about music has often happened outside of university music and musicology departments, which have often been securely housed within schools and faculties of humanities. Instead, it has been supported by departments of physics, psychology, sociology, physiology, mathematics, computing, and so on.

## 9 Implications for the Future of Musicology

Musicologists tend to specialise in one of musicology's subdisciplines, since it is clearly impossible for one person to acquire basic skills and keep track of the main developments in all (or even more than one) of those subdisciplines. That implies that interdisciplinary research within musicology is best achieved through collaboration between scholars with different backgrounds and expertise, which also promotes the unity of musicology (cf. the Conferences on Interdisciplinary Musicology).

Historical musicology is, and will presumably always remain, one of the few central subdisciplines of musicology. However, it is no longer *the* central discipline of musicology. It is therefore misleading to (continue to) use the terms “musicology” and “historical musicology” as if they were somehow equivalent or synonymous (as often happens in Germany and the USA). It is similarly misleading to assume that

scholarship about “music” and hence “Departments of Music” should be exclusively or necessarily associated with the humanities (as often happens in Britain and Commonwealth countries). Yet many musicological conferences, societies, journals, departments, and scholars continue to do just that. Although they *define* the term musicology in its broad sense, according to which historical musicology is just one of many musicological subdisciplines, they generally *use* it in the narrow sense of historical musicology, or a musicology in which historical musicology is central and other subdisciplines are peripheral or subordinate. Historical musicology dominates their programs, contents pages, research projects, and curricula.

For example, the entry “musicology” in Grove dictionary (2001) begins by defining musicology in the broad sense (of all scholarship about all music), and applies this definition when covering the period up to roughly 1900. After that, it tacitly switches to the narrow sense of the term (i.e., historical or humanities-oriented scholarship about Western music) when dealing with the 20th Century and especially the period since 1945. The music psychology of Helmholtz, Kurth, Riemann and Stumpf is regarded as musicology, but that of de la Motte-Haber, Krumhansl, and Sloboda, which is no less musically relevant, is not. Instead, it appears elsewhere in the dictionary under the heading of “music psychology”.

One could argue that modern music psychology research is often performed in psychology departments, and in this sense no longer belongs to music or musicology. If that were true (in fact, a considerable proportion of music psychology research happens within musicology), it is a dangerous argument. For one could then argue that ethnomusicology research could equally well be performed in departments of cultural anthropology, and music history research (along with art history research) could equally well be performed in history departments. It follows that a music or musicology department is more likely to survive in the face of future funding cuts and changes in university organisation if it brings together several different aspects of musical scholarship under one roof.

If the internal organisation of musicology is to reflect the changing distribution of musically relevant research, the conferences, societies, journals, and departments currently labelled “music” and “musicology” need to decide whether they are primarily about musicology in the narrow or the broad sense. If narrow, they might consider a change of name, e.g. to “history of Western music” or “humanities musicology”. If broad, they should ensure that they represent the various subdisciplines of musicology more or less in proportion to current volumes of international research in those areas. If they strive both to serve historical musicologists and to serve all of musicology, as for example the International Musicological Society (IMS) does, this ambiguity should be clarified and discussed. A radical solution would be to split the IMS and leading national musicological societies (American Musicological Society, Royal Musical Association, Gesellschaft für Musikforschung etc.) into two - one society for historical Western musicology, and another that fairly represents all musicological subdisciplines. Musicology, one might argue, has grown to be too important for a compromise solution.

This raises the issue of whether musicology departments should remain within faculties (or schools) of humanities. When music is conceptually and structurally associated with the humanities, the musicological sciences are neglected to the detriment of musicology as a whole. A partial solution might be to establish faculties or

schools of “cultural studies”, or better - since not all of musicology is directly about culture - “arts” in the sense of graphic art, music, literature and so on. This may be an ideal solution for graphic arts and literature, but not necessarily for music, which has a stronger scientific component.

Perhaps the best solution for musicology is to raise it to the status of a faculty, school, or university, in combination with music performance (as in Austria's three music universities). (Post-) Modern musicology has the character of mini-university in which the approaches, methods, findings, and theories of a large number of university disciplines are applied to musical questions. The parent disciplines - anthropology, history, cultural studies, physics, psychology, sociology, philosophy, physiology, computing - are not unequal in academic importance or social relevance. In a music (-ology) faculty, school, or university, it is possible to represent a wide range of musicological subdisciplines and afford them appropriate minority rights. This may be the most fruitful structural basis for an open, forward-looking, self-critical, dynamic, pluralistic musicology.

### 9.1 A Level Musicological Playing Field?

I argued above that the sciences are not intrinsically more important than the humanities - or vice-versa. Many academics on both sides of the humanities-sciences divide may take issue with this claim, believing themselves to be superior.

Scientists may be so sure of their superiority that they have no need to talk about it. They may tactfully avoid saying anything negative about the humanities, while at the same time behaving as if the sciences are inherently superior; the ambiguity of the English word “science”, usually meaning *Naturwissenschaft* but sometimes more generally *Wissenschaft* (as if the two were the same thing!), may be regarded as a reflection of this form of arrogance. They may ignore humanities scholarship that is directly relevant to their research, as if it did not exist. For example, international English-language music psychology has tended, at least for the past few decades, to ignore not only most of the relevant research in other musicological subdisciplines, but also historical developments in music psychology itself, especially in Germany before the Second World War. If asked, scientists may try to justify their superiority by citing the great achievements of their predecessors and reminding us that all members of society benefit from technological developments following scientific discoveries. Scientists may present themselves as naive empiricists, unable to convincingly justify their irrational belief in the omnipotence of scientific methods. Scientists may also forget the importance of culture for humanity in general and for their own lives and values in particular. They may forget the enormous threats now hanging over the world as a result of scientific “progress”. They may also forget that since they are seeing science from the inside and the humanities from the outside, they are not objective (in the scientific sense!) and, for this reason, may be overestimating the importance of science and underestimating the importance of humanities.

Humanities scholars may also claim superiority, but for different reasons. The 20th-Century dominance of the sciences has given the humanities an inferiority complex. The subliminal feelings of inadequacy shared by humanities scholars seems to be proportional to the small amounts of funding that they tend to attract from both public

and private sources. Perhaps they are afraid, deep down, that the scientists might indeed be fundamentally superior (untrue, of course) or that their inability to understand and apply scientific methods and ways of thinking will one day be exposed (even though humanities scholars evidently do not need scientific skills any more than scientists need humanities skills). Humanities scholars may hide their feelings of inadequacy behind a shroud of arrogance or important-sounding language. Or they may attempt to reclaim the high ground by playing power games with their scientific colleagues. Thus, many historical musicologists continue to believe that the humanities in general, and historical musicology in particular (more precisely: the notated music of Western cultural elites) are central to musicology, just as they were in the 19th Century; the ambiguity of the word “musicology”, which in spite of an extremely eventful century of musicological expansion and diversification can still mean either “all research about all music” or “history of notated music of Western cultural elites”, may be regarded as a reflection of this arrogance (consider the titles and content of journals such as *Acta musicologica*, *Archiv für Musikwissenschaft*, *Journal of the American Musicological Society*, *Journal of Musicological Research*, *Journal of Musicology*, *Musikforschung*, *Revue de Musicologie*, *Studien zur Musikwissenschaft*). Of course, the notated music of Western cultural elites is no more important or aesthetically valuable than other kinds of music - at least not in any fundamental sense (Cook, 1998) - and the discipline of history is no more important (again, in any fundamental sense) than other disciplines such as anthropology or the parent disciplines of systematic musicology.

It is important for the future development of musicology to expose and deconstruct all such tacit assumptions of relative importance. Musicology can only reach its full potential if a space is created within which all musically relevant disciplines can work both together and separately. A precondition for productive collaboration is a level playing field in which all musically relevant disciplines are regarded as equally important.

Within universities, music and musicology tend to be regarded as fair-weather activities. When there is not enough money to go around, areas perceived to be fundamentally important (such as the sciences, medicine, and economics) tend to get the largest remaining slices. The humanities, to which musicology is perceived to belong, often feel like they are getting the leftovers. Musicologists can respond constructively to this situation by pursuing the following long-term strategies:

**Structure.** Adapt the internal structure of musicology - including the organization of departments, societies, conferences, and journals - so that the distribution of subdisciplines within them reflects the corresponding distribution of current international research. Reclaim those areas of musicology that have temporarily been lost or marginalized, and re-integrate them.

**Quality and collegiality.** Develop and promote efficient, effective quality control mechanisms (such as anonymous peer review) and constructive interdisciplinary communication in all musicological research and teaching. This is the best way to promote clear, sharp thinking in musicology and, in that way, to promote musicology both locally and globally. Or put another way: the best way to threaten the existence of a department is to allow irrational forms of communication and aggressive behav-

iors to develop, and then to expose colleagues in other departments to that irrationality and aggression over a protracted period. Such a situation can be avoided in the long term by strategically promoting collegiality and the objective expert control of academic quality in both research and teaching.

**Interdisciplinarity.** Demonstrate how humanities and sciences (including social and information sciences) can work together productively within musicology, in order to formulate the most plausible and useful answers to musically interesting questions, as a contribution to a broader understanding of the human condition, to enhance quality of life and promote human survival, and as a model of interdisciplinary productivity for other disciplines. In this structure there may be little point in maintaining the problematic category of “systematic musicology”. It may be preferable to refer directly to the smaller, better-defined subdisciplines of music acoustics, music psychology and so on. A more open structure is more likely to promote interactions both within and between the humanities and the sciences.

**Continuity.** Strive to reach these goals slowly but surely, respecting valuable traditions. If something is already working, don't fix it.

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