19 Concepts, Conceptions, Reflective Understanding: Reply to Peacocke

Chris Peacocke's interesting essay is broadly persuasive and broadly congenial to things I have emphasized about incomplete understanding and rationality.[1] It takes these matters in a direction that I have not carried them. It is also congenial to things that I have written about the way the nature of a person's mental states can depend on his relations to his environment. Peacocke's essay investigates the explanation of reflective understanding. He asks how we are to explain an individual's improvement on his understanding of terms or concepts like *chair* or *limit*. He connects these issues in original ways to questions about how we are to explain the dawning of understanding of simple logical or mathematical truths that rests on the basis of an understanding of their component concepts. This is a rich, provocative essay. I will not be able to do justice to it. What I want to do is endorse the spirit of the main proposals about explanation, support the letter of some of them, and raise some questions about points that I have doubts about or that I think may need further development.

I

What seems to me right about the spirit of the proposals is the idea that one can explain many cases of reflective acceptance of "conceptual truths," and the application of incompletely understood concepts, in mentalistic terms. The proposals are also attractive in their appeal to unconscious, "implicit" mental structures—though I will return to the question of what "implicit" should mean here. The idea that these explanations are not only mentalistic explanations but are explanations that bear on understanding our rationality also seems fundamentally on the right track. Finally, the idea that not all implicit conceptions that explain the use of concepts are correct conceptions seems to me fundamentally right and a consequence of the principles that underlie anti-individualism.

What is an implicit conception? I take it that implicit conceptions are unconscious psychological conceptual structures that explain our ability to apply concepts to cases, or to realize that principles involving concepts are true. They explain such applications and principles even though we cannot easily explain to ourselves how we recognize the examples as instances of a concept, or how we explain the dawning of realization that such principles are true. I take it that implicitness is supposed to be compatible with, and in fact demand, psychological reality. And implicitness of a conception is compatible with its being either explicitly or implicitly *represented* (p. 137). I am not fully clear about what explicit and implicit representations are. I suppose that the issue turns on whether there are neurally realized syntactically structured *tokens* whose syntax corresponds to the form of conceptual structures that implicit conceptions have. If something like this is what is meant by explicit representation of an implicit conception, it seems to me correct that whether implicit conceptions are explicitly (though unconsciously) represented can be left open.

But I am still not clear what the implicitness of an implicit conception is supposed to consist in. Peacocke seems to indicate that implicit conceptions are conceptions at the subpersonal level (p. 384). I take the subpersonal level to be a level that is not only not conscious, but is not accessible to introspective or reflective consciousness and must be gotten at only theoretically. This is true of the basic grammatical structures underlying our linguistic competence and the information-processing structures underlying our perceptual experience. But elsewhere Peacocke takes implicit conceptions to be difficult but not impossible to make explicit through reflection. This makes it look as if implicit conceptions are real personal-level conceptions, just ones that are unconscious and relatively difficult to articulate in consciously available judgments. My guess is that both sorts of "implicitness" might be relevant to different aspects of explanations of the psychological facts. Perhaps there are even more than two types of unconscious structure here.

A further question I have about the psychological aspect of Peacocke's proposal centers not on the appeal to implicitness but on the presumption that the mentalistic elements in the relevant psychological explanations are always *conceptions* associated with the relevant concepts. It seems to me likely that in many cases, the relevant explicit explicative judgments—and improvements through reflection on previous explicative judgments—will be derived through unconscious mentalistic processes that do not use an unconscious explicative *conception* as material in their transformations. Rather, for example, they may use perceptually stored material, which has not been unified even at any "implicit" level under some explicative, conceptualized principle. The storage may be in the form of purely perceptual judgments about cases. Such perceptually stored material might be used together with certain ("implicit") inductive principles or principles governing relevant similarities to form explicative judgments at the explicit level.

Take the chair case as an example. I discussed this case at length in my (1986). On Peacocke's account, those who can arrive at an explicitly articulated definition of 'chair' carry around an implicit "definition" of 'chair' that is often presumably fully correct. I am inclined to think that often we lack such a definition not only at the explicit level of readily accessible conscious judgment, but at any implicit level (both the truly subpersonal level and the unconscious, personal, hard-to-access levels). What enables us to arrive at correct definition is partly the memory of many instances that we have judged to be chairs, or at any rate, dispositions derived from such judgments. So we have stored hard-to-access memories of perceptual judgments (or dispositions to new judgments based on these prior judgments) of things as ski-lift chairs, deck chairs, living room chairs, and so on.

One might ask how we made these initial judgments (unifying the different perceived examples under the concept *chair*), if we did not have a guiding definition. The answer is that usually we are just told that a ski-lift chair is a chair (at some time in the dim past), or that a deck chair is a chair, without being guided by some antecedent conception of

what makes them all chairs. We may never have used even implicitly a conception to include the ski-lift chair under the concept—though we *do* include such chairs under the concept. It does not seem necessary that once we have judged a ski-lift chair to be a chair, we already find (implicitly) a unifying explicative conception that explains what is essentially chairlike in both living room chairs and ski-lift chairs. We may carry only the notion that both are to be sat on, and are to be differentiated from stools, benches, love seats, and sofas—but no conception that yields necessary and sufficient conditions. We may, it seems to me, simply carry unconsciously the perceptual memory of the look of a ski-lift chair together with the unconscious memory that we categorized it as a chair, or simply the present disposition to categorize it as a chair. When we try to form an explicit reflective explicative conception of what chairs are, we may simply use offline—that is, unconscious—"implicit," *inductive* principles to arrive at our explicit explicative conception of our concept *chair*. We may remember the ski-lift chair and realize that it is a counterexample to an explicit explicative conception that held that chairs must have legs. I think it unlikely that such an explicative conception must always be already formed at some unconscious level. So in such cases, it is not conceptions that are "implicit." Rather, it is inductive principles together with a range of examples that are unified under the concept—though not under any conceptualization, or explication, of the concept.

We need not, of course, always work with memories of instances that have actually been categorized under a concept, or with dispositions associated with past categorizations. We may be driven by general unconscious similarity principles from actually categorized cases to include other merely hypothetical cases as well, without having—even at some implicit level—a unifying conceptualization of the cases that is specific to the concept being explicated or conceptualized. An explicative conceptualization may first emerge explicitly, as a product of unconscious processes, at either subpersonal or hard-to-access personal levels, which make use of intentional material that is both more specific and more general than the explicative conceptualization specific to the relevant concept. One could project from one jade sample to the next. One might remain open to the idea of a unifying account of the similarity, and lack any general defining conception. Such a conception might become available only through empirical research, by geologists or philosophers. Here the limits may be set partly by what people have actually applied the jade concept to. Possible similarly looking and feeling minerals, other than jadeite and nephrite, may not count as jade just because they are not in the appropriate actual sample classes.

I find Peacocke's account of the standard model of arithmetic very attractive. But a point similar to the one just made may apply, in more complex form, even to the Leibniz/Newton limit case. It seems to me a stretch—and at any rate, not obviously correct—to think that Leibniz and Newton shared as a stable part of their unconscious repertoire an implicit but fully formed version of the Weierstrass explication. What seems to me more likely is that

they had a mastery of the basic calculus techniques, aided perhaps by some geometrical sense of approaching a limit on a line, which yielded correct answers in specific applications. Again, they may have had a not fully conceptualized sense of mathematical similarity, which may or may not be conceptualized into a principle, even implicitly, that explains their ability to project to the cases.

Whether the implicit conception is fully formed seems to me open to investigation, even assuming that a definite concept, that of *limit*, is sharply grasped. The concept is sharply grasped insofar as one applies the concept to exactly the right cases. But what guides the application of the concept might not be purely an implicit conception or rule, but a combination of rules of thumb, paradigm cases, and a sense of mathematical similarities. That is, incomplete conceptualization of a definite concept that is being thought with may be present at both explicit and implicit levels. The individual's ability to get the examples right may be explained by a combination of mental abilities that do not fall at just the level of a correct conceptualization, implicit or explicit. It seems to me doubtful that implicit *conceptions* explain all the phenomena that Peacocke is concerned to explain.

The individual also may not, at the explicit level, make all the right judgments about examples, yet may still grasp a definite concept that includes those examples. It may be that general principles of mathematical practice and rationality can be seen, retrospectively, to warrant inclusion of certain cases under a given concept, even though the individual expert may be disposed to misjudge those cases in individual instances.

I think that this case may be illustrated in the early history of the concept of *set*, when limitative prejudices blocked natural generalizations for at least some experts. I think that the early disputes over the axiom of choice can be seen, at least in some instances, in this light. It is certain that some of those disputes derived from mathematicians having different concepts, while using the same term 'set' to express them. Some had the modern iterative concept of *set*. Some had a concept closer to the modern concept of *class*. But some of the disputes seem to have stemmed from objections to the axiom of choice that were driven not by a noniterative concept of *set*, but by a sense of a need to limit the proliferation of sets by a closer epistemic control on their postulation than the axiom of choice provided.[2] I think that mathematicians with such philosophical views as these had the iterative concept of set, but made mistaken judgments about what counted as a set (rejecting consequences of the axiom of choice), because of philosophical prejudices that interfered with what has come to be seen as sound mathematical practice.

At any rate, it seems to me that it would be a mistake to think that the implicit mental structures that explain explicit judgments *must* themselves always be complete. Sometimes we depend on others. Sometimes we depend on a combination of examples, an unconceptualized *sense* of similarity, and principles at the wrong levels to count as conceptions associated with the concept at issue. Sometimes the limits of a concept are determined

partly by similarity principles but partly by whatever happens in actual fact to account for the types of samples that are actually counted as examples. This anti-individualist element in our mastery of concepts combines with the points about the role of nonconceptualized psychological elements in our use of concepts to indicate that the actual correct application of concepts we have is guided by more than implicit conceptions that we associate with the concepts.

II

This psychological point seems to me to bear significantly on our understanding of the epistemology of reflection. Most traditional accounts of a priori reflection have, like Peacocke's, assumed that a conception of the rule associated with application of the concept is—at some implicit and unconscious, or subliminally conscious level—fully formed in any individual that has the concept. Reflection was seen as just a matter of bringing to consciousness and fully articulating a conception or rule that is already present in the mind. Peacocke notes, as traditional rationalists tended not to, that the implicit conception will sometimes be at a subpersonal level. So it will not be accessible to reflection or person-level inference. This seems to me correct. But I think that the distance from traditional conceptions of implicit mastery of concepts goes further.

Kant sometimes writes as if he *identifies* concepts with functions of unity, or rules, for holding cases and subordinate concepts together.[3] He saw the rules as produced and, at some level, as grasped by the understanding. But the twentieth century has seen an emphasis on the role of instances or examples in individuating concepts. Wittgenstein, Kripke, and Putnam, in their different ways, have indicated that concepts are not entirely fixed by background rules, principles, or descriptions that the individual has grasped. I have tried to develop this idea in my own ways. Implicit in this emphasis on the role of instances or examples in individuating concepts is, I think, a recognition that some of the ways that we have for projecting from examples are stored nonconceptually. The perceptual system and nonconceptualized senses of similarity may guide our projection from central instances to which a concept applies, to further instances. Only with reflective conceptualization of rules that codify these lower-level abilities do we arrive at conceptions that are adequate to explain our application of certain concepts.

Suppose that concepts are not always backed by implicit conceptions—conceptualizations—that explain our application. So reflection on the nature of our concepts is not always a matter of bringing to consciousness a conceptualized rule that guides their application. It is part of the formation of such a rule. But such formation cannot be seen as formation of the concept. For the concept is already fully formed, thought with, and even

correctly applied. To think with the concept and even to have a sharp grasp of it, in the sense discussed earlier, it is not necessary that one have an associated descriptive rule for its application.

This point is relevant to understanding philosophical thought experiments. For example, in the Twin Earth cases it is commonly assumed that we all have, unconsciously in mind, descriptions, rules, or principles that guide our use of such concepts as *arthritis*, *chair*, *sofa*, *edge*, *water*, and so on. It is conceded that these are hard to formulate. Still, it is often assumed that they are always somehow implicitly complete and present in the individual's mind. I believe that this assumption is mistaken. Some philosophers who have sought to refute the thought experiments have added to this view the further mistake of identifying concepts with the supposed underlying descriptions, rules, or principles. They presume that their formulations are themselves environmentally independent. (This presumption is itself unargued and in many cases unconvincing.) They then maintain that these descriptions, rules, or principles guide the individual's use of a term or concept, regardless of the environment.

This line commonly makes further mistakes. But the one that interests me here is the assumption that when an individual has a concept, there is always in the individual an associated, fully formed implicit conception that explains the application of the concept and applies to the same instances that it applies to. Reflection on the nature and application of our concepts seems to me a more complex enterprise than making conscious certain conceptualizations, rules, principles, descriptions, or definitions that are already implicitly in the mind and associated with the concept.

The epistemology of reflection is, I think, correspondingly more complex than traditional philosophy has represented it. It is natural and traditional to see reflection on the nature of concepts as warranted apriori. Let us suppose that 'apriori' means 'independent in justificational force from sense-perception or sense-perceptual belief'. Suppose that we are reflecting on the nature of our concept *chair*. Suppose that we recognize that the concept applies—and long has applied—to ski-lift chairs, without legs; but we have no conceptualized principle, even implicitly, for projecting from our standard cases of chairs to these special cases. Thus the connection between the standard cases of chairs and the ski-lift chairs is simply that we have stored perceptual similarities between the cases and have accepted long ago someone's calling a ski-lift chair (or ski-lift chairs) a chair. Thus we are supposing that when we recognize that a ski-lift chair is a chair we do not derive this recognition from a principle or conception that includes specification of the properties of ski-lift chairs that make them chairs. Rather, we make use of a memory of the case and a confirmatory sense of perceptual similarity and generalized conception of functional similarity between the cases. Thus, we note that the ski-lift chairs have a flat seat, accommodate one or two persons, and function to be sat on. But our acceptance of the case is

driven not by a generalization but by our memory that *that sort* of object—or perhaps even a particular remembered object—counts as a chair.

Is such a memory warranted apriori? That depends on the nature of the warrant for present tense claims like *that sort of object*, *which is used in ski-lifts*, *counts as a type of chair* and *that object counts as a chair*, where the claims are taken to have a role in specifying or teaching the nature of the concept, not merely *ordinary* statements of fact.[4] These questions are complex and multifaceted, and I will not try to answer them here. I want simply to raise them. I do not think that these questions arise for all cases of reflection on the nature of our understanding of concepts. It seems to me that sometimes Peacocke's account of implicit conceptions is correct and fully adequate. I just want to point to what I regard as further complexities that warrant our attention.

III

Let me turn now to issues about explaining rationality, with particular reference to Peacocke's historical points. His invocation of Leibniz and the rationalist tradition seems to me entirely appropriate. I agree with most of what he says in this section. I have here three reservations, two of them of perhaps only minor significance.

As Peacocke notes, Leibniz holds that axioms are evident as soon as their terms are understood. He objects that Leibniz here overstates the ease of the discovery of axioms. This may be so. But it is important to remember that Leibniz meant by 'axiom' not just any proposition that might be taken as a starting point for an axiomatic theory. He had the old Euclidean conception of axioms as truths that are basic in a justificational order and that are sufficiently simple that, assuming they are fully understood, there is no need to argue for them or derive them from anything else. I think such a conception has more to be said for it than most modern philosophers presume. Moreover, I think that Leibniz set a very high standard for understanding of the terms. I think that he meant complete, explicit understanding, not merely the sort of understanding sufficient to use the terms and reason with them. So it is not clear to me that there is any mistake in Leibniz's view that given full understanding, one finds basic truths evident. I think the view is virtually definitional of the traditional conception of an axiom. It seems to me that Leibniz is right about a narrow class of truths that might be counted axioms in the old sense. Simple truths of logic and arithmetic seem to me to be so basic that if one understands them, one realizes that they are true. No argument for them could provide them with a justification that adds force that is not already present in understanding them.

The second reservation concerns Peacocke's account of what it is to be clear but not distinct. He notes that according to the traditional view, an idea or concept is clear for a

person if the person can use it to recognize instances of the concept. He quotes Leibniz's remark that having a distinct idea lies in the ability to enumerate separately the essential characteristics that distinguish the things the idea applies to from other things. He explicates distinctness in his framework. He claims that a thinker with a distinct idea is one who has succeeded in achieving an explicit formulation of the implicit conception he had when he had only a clear but indistinct idea.

This claim seems only approximately true. For as Peacocke himself remarks, implicit conceptions can be incorrect explications of an individual's idea or concept. In such cases, making them explicit would not be making them distinct. Further, suppose that I am right that even implicit conceptions that are correct as far as they go may not have *conceptualized* the full correct explication of a concept. So merely making such incomplete implicit conceptions explicit will not suffice to make a concept distinct in the old fashioned sense—that is, give it a full, correct explication. Incompleteness of explicational understanding, or indistinctness, can hold at the implicit as well as the explicit level.

A third reservation, the one that interests me most, has to do with Peacocke's discussion of Frege and the rationality of accepting logical axioms. He points out that Frege gave arguments for his axioms from semantical-looking background assumptions for the truth of most of his axioms. Yet he regarded the axioms as self-evident—that is, recognizable as true independently of justifying them through derivation from other truths. In my view, although Frege did not philosophize about this apparent oddity, he knew exactly what he was doing. What is more important, there is a philosophically tenable resolution of the apparent conflict.[5]

First, it should be noticed that the arguments Frege gives that have his axioms as conclusions are fully explicit. So the apparent conflict arises independently of any distinction between implicit and explicit levels. Second, it is important to distinguish between justification of a sentence's expression of an axiom and justification of the axiom itself. Frege believed—and I agree—that the fundamental truths of logic are not strings of symbols, even though strings of symbols express such truths. Frege is interested primarily in the truths, but he is simultaneously setting out and justifying his logical symbolism by showing its adequacy to express the underlying truths. The arguments in question, in *Basic Laws*, bear on both the symbolism and on the logical truths, but in different ways. Close analysis can separate out these points. But Frege is fairly loose in his book about slipping back and forth from semantical discussion about symbols to substantive exposition of his truths. Peacocke also writes sometimes of derivations of sentences (p. 146) and other times of derivations of the logical truths themselves (p. 146). Of course, both are at issue. But the bearing of the semantical arguments is different in the two cases.

It seems to me that the semantical arguments do provide, in a straightforward way, a justification for axiom-expressions and for formal symbolic expressions of the rules of

inference. They show rigorously that the symbols are adequate to express what we recognize as axiomatic logical truths and valid inference rules.

But the bearing of the arguments is different on the logical truths and inference rules themselves. It seems to me incontestable that Frege would not have regarded any arguments from language as being capable of justifying language-independent logical truths and rules of inference. In fact, however, most of Frege's semantical-looking arguments for the axioms make no essential reference to language at all. Still, they are arguments from truth-conditions (associated with thought contents) to the language-independent axioms. And the very fact that they are arguments with the axioms as conclusions is already puzzling, since the axioms are supposed to be self-evident and not in need of proof.

What is going on, and what can be shown from comparing several of Frege's texts, is that Frege regards the arguments not as justifying the conclusion but as articulating the content of the conclusion. The arguments are not intended to provide justification for belief in the conclusion by deriving it from premises belief in which is antecedently justified. For, as he says, the conclusions are not in need of proof or justification. Frege means by 'proof' a deductive argument that provides justification from self-evident basic truths as premises.[6] The articulation of content that the arguments provide is simply an articulation of understanding of the conclusion. So it remains possible for him to hold that the content of the conclusion carries all the evidence needed to recognize the conclusion as true: That is, the conclusions of the arguments, the axioms, are self-evident. Understanding the axioms justifies one in believing them; but full, explicit understanding itself requires an ability to articulate the truth-conditions of the contents that are understood. I want to elaborate this point a bit, since I think it correct. Three background points are important.

One is that any understanding, even understanding of simple logical truths, requires mastery of complex inferential connections. This is one of Frege's greatest contributions to philosophy, and something not present with anything like the same clarity in Leibniz. The point requires that understanding of both terms and propositions is not independent of acceptance of principles and inferential connections. So understanding a logical truth is associated with arguments using the terms or concepts embedded in the truth.

Second, as Frege also famously maintained, what is understood places conditions on truth. So understanding the sense of a sentence, or understanding (grasping) a thought, requires understanding its truth-conditions. Putting the two points together, understanding a logical truth in a fully articulate way requires an ability to articulate through argument its sense or truth-conditions.

Third, it is doubtful that arguments to at least some very simple logical truths—and at least some simple rules of inference—from their truth-conditions are arguments that provide any additional justificational force to that already involved in really

understanding those logical truths or rules of inferences. The premises and rules of inference used in the arguments from the lines of a truth table are not any more strongly justified, or more evident, in at least many simple cases, than the logical axioms that they are used to derive. Whatever role Frege's arguments from truth-conditions play, they do not provide any extra rational support or warrant for their conclusions beyond what is involved in understanding the conclusions. The conclusions are, in these cases, at least as rationally evident as the premises. I believe that in Frege's senses of 'justification' and 'proof', the relevant arguments are not justifications or proofs of their conclusion.

Some things in Peacocke's exposition are congenial with this point. He writes of the arguments as *explaining* our rationality in accepting the premises. Such explanation might be distinguished from justification that adds justificational force to our warrant in accepting the conclusion. He also writes of explaining the evidentness of the axiom. Again, such explanations might be seen as articulations of our understanding, not as justifications from more basic premises. Moreover, with certain qualifications I will not try to state here, I join Peacocke and follow Frege in holding that what is understood is to be explicated in terms of truth-conditions.

But I do not believe that Frege's arguments for the simplest logical axioms, where these axioms are understood to be thought contents or propositions, were meant as justifications of them. The arguments do not add any justificational force not already involved in complete understanding of the content of the propositions in question. Frege was surely fully aware of this fact.

I think that the view that Frege seems to have held is correct: Understanding the axioms requires an ability to give the sorts of arguments from truth-conditions that he gives in articulating the intentional content of the axioms. But it is the understanding of the axioms themselves, not a justification of them from antecedently understood principles governing truth-conditions, that is fully sufficient for being warranted in believing them. In this sense the axioms are evident *in themselves* and not in need of justification or proof from other truths.

Frege's great contribution is to indicate that because of the dependence of understanding on mastering inferential connections, "in themselves" is a more subtle and complex notion than most traditional philosophers realized. A thought has a definite content, but that content is logically connected to other contents. And thinking with the content necessitates being able to make some of the logical connections. *Understanding* the content (whether minimally or in some deeper way) requires understanding some of the inferential connections. But once understanding is achieved, once one *has* and understands the relevant contents, justification does not require: deriving it from other contents from which it inherits justification. The position seems to me to derive support from the fact that the semantical arguments seem intuitively to add no warrant to full understand-

ing of the conclusion. In fact, they seem to be just argumentative articulations of such understanding.

It is important to bear in mind that there are different possible arguments with the axioms as conclusions that articulate understanding of the axioms. These differences reflect the fact that no one argument is necessary for understanding. Let us consider

$A \rightarrow (B \rightarrow A)$.

There is, for example, the type of articulation Peacocke outlines. This type appeals to a metaperspective and explicitly uses a concept of truth that is a predicate of thoughts. Frege gives two other types of arguments, both in the object language: The first one starts with a step we would formalize as

$\sim(A \rightarrow (B \rightarrow A)) \rightarrow (A \,\&\, (B \,\&\, \sim A))$.

By commutativity and associativity of conjunction, conjunct-elimination, noncontradiction, *modus tollens*, and double-negative removal:

$A \rightarrow (B \rightarrow A)$.

The second argument (which Frege gives in *Begriffsschrift*) is that if A, then A regardless of whether B, for any B. All of these arguments make use of an understanding of the truth-conditions of the conditional. None seems to do more than articulate what is involved in full understanding of the axiom. And none seems to rest on principles that are clearly more fundamental, or more obviously true than the axiom, or are self-evident in a way that the axiom itself is not.

I am happy to concede that in the case of each principle or rule there is an explanation of the rationality of accepting it. But I am not inclined to think that the most basic principles receive any genuine or needed epistemic warrant—or positive justificational force for believing them—through the arguments. The fundamental warrant for believing them lies in understanding their content. They are self-evident. It is just that any such understanding has to be accompanied by an ability to explain the rationality of accepting the proposition through discursive argument.

I remain attracted to a conception of rational justification of the simplest principles of elementary logic and arithmetic that is broadly similar to the conception shared by Frege and Leibniz. According to this conception there are certain basic truths and rules of inference. Understanding these suffices to warrant belief in them. No argument for them can yield warrant for belief that adds force to the warrant already yielded by understanding them. Such warrant is maximal. The truths "do not need or admit of" any further justification. (See note 6.) In this sense they are basic and self-evident. Arguments of the sort

we have been discussing elicit the fact that there are more basic truths and rules of inference (all equally basic) than are needed to develop logic, at least first- and second-order logic. So the foundation is overdetermined.

This feature of overdetermination makes contrasting this sort of foundationalism with a sophisticated coherentism a subtle and perhaps uninteresting terminological matter. I think, however, that warrant is best seen as lying in the understanding of the relevant truths. There is no need to rest the warrant on "coherence" with other truths. But the understanding unquestionably involves abilities to make inferential connections with other truths. And there is, of course, a necessary coherence among the logical and arithmetical truths.

Like Frege, I combine this foundationalist justificational structure with a pluralistic, coherentist conception of understanding. Understanding requires an ability to make inferences to and from the understood intentional contents. Any of various inferential patterns of connections among thoughts can suffice to yield understanding of fundamental logical truths or rules of inference. For basic truths the connections hold both between thoughts and rules of inference that are equally fundamental, and between self-evident ones and some less basic ones.

More needs to be said about the distinction between the role of understanding in rational acceptance of the principles and the role of argument in articulating the understanding. The naturalistic and holistic tendencies that we have inherited from Quine tend to ignore or blur such a distinction. But anyone who refuses simply to reduce understanding or grasp of a thought-content to some *particular* pattern of inferential abilities—while still holding that understanding requires some such pattern of inferential abilities—is in a position to draw it.

More also needs to be said about the traditional notion of basic, self-evident truths. Many have doubted that there remains any use for the idea that some thoughts in logic and mathematics are, from an epistemological or psychological point of view, maximally basic. Even those who do not embrace the empiricist view that logic and arithmetic depend for their justification on their role in empirical science commonly emphasize that there are so many "axiomatizations" of formal theories that finding basic ones is a pointless exercise.[7]

This negative attitude often derives from mixing up the modern conception of *axiom* with the traditional one. The modern conception is centered on what is *taken* as basic in a particular presentation of a theory. Certainly the variety of possible "axioms" in this sense is endless. And certainly some things that are "axioms" in the modern sense are in no way self-evident or epistemically self-sufficient. Some of the axioms of high-level set theory, for example, are certainly not self-evident. They are not even derivable from self-

evident truths. Not all of mathematics is derivative from self-evident truths. It does not follow that there are no epistemically fundamental truths in logic or mathematics. In fact, it seems quite obvious that there are truths that are for us epistemically more basic than others. And it seems to me arguable and likely that there are truths that are maximally basic, in the sense that no argument for them could add to the warrant inherent in understanding them.

Whether there are any basic truths that are basic for all finite rational beings is a further question. I am sympathetic to the idea that some truths and rules of inference are necessarily basic for every finite rational being that has the relevant concepts. But I leave this an open question. It is a question that would require extensive and subtle development. Whatever the answer to this question, it seems overwhelmingly likely that, as regards arithmetic and logic, there are broad similarities among human beings in what count for them as simpler and epistemically more fundamental truths, and in what count as more complex and epistemically derivative. It seems to me likely that the line between what is justificationally basic and what is justificationally derivative may be blurred in some cases, for some individuals. And it seems likely that where the line is drawn will vary with the individual. Some individuals may include more truths as basic than others, depending on the depth of their understanding.

The old-fashioned picture of a rational order of truths is out of favor. There are certainly many obstacles to bringing such a picture back into focus. Even a rationalist picture that is much more modest and more qualified than the traditional versions faces numerous obstacles. I think, however, that such a picture is worth developing.

Notes

1. Substantially this essay was given as a reply to an earlier version of Christopher Peacocke's essay at the APA in Pittsburgh in April 1997.

2. For a detailed account of the controversies over the axiom of choice, see Gregory Moore (1982).

3. Kant, *Critique of Pure Reason* (B92–93, A103). Ultimately, Kant's view is much closer to mine than these passages suggest.

4. Of course, I agree with Quine (1966) against conventionalists that it is *both* a claim of fact and a claim about meaning or concepts. Obviously these questions are close to issues that Kripke (1972) raises about the contingent apriori.

5. For a detailed discussion of these matters, emphasizing the historical point of view, see my (1998).

6. The phrase derives from Leibniz, *New Essays in Human Understanding* (1705, 1765, 1989), e.g. IV, ix, 2; 434; see also Frege, *Foundations of Arithmetic*, section 3. This notion of proof is discussed at some length in my (1998) and my (2000).

7. For a contrary view about all of this, see Cherniak (1986). None of what follows is meant to do justice to Cherniak's position. I am not, however, persuaded by his arguments. For an interesting discussion of related issues, see Evnine (1999).

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