

## Hidden Agendas: Knowledge and Verification

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### 1. Introduction

Schlick has been accused of a number of philosophical sins over the years, most notably his rather casual, and frequent, traversing of the borders between language, experience, and reality. While we allow our scientists the freedom to roam creatively throughout the peripheral regions of Epistemology and Metaphysics, we are not so tolerant of our philosophers. We know that Schlick gave up the physics laboratory for the philosopher's armchair, and we expect him to stick to a particular position.

Schlick's colleagues in the Vienna Circle were not totally blameless in this regard, either, and it may be that part of the charm of their work is precisely their inability to stick to the positions that solidified over 2500 years of western philosophy. Empiricism and rationalism appear to coalesce in their writings, idealism and realism cohabitate the same theories, the Senses follow the Intellect right out of Plato's Cave and into the light of certainty. We become seasick in Neurath's boat, wondering whether his rebuilders can keep it afloat, or if it will eventually hit the empirical ground after all.

In Schlick's case, we wonder whether he really did 'convert' from realism to something other than realism, and what exactly Wittgenstein had to do with it. We wonder what his realism entailed: in the inimitable words of Alberto Coffa,

In Schlick's hands, realism had been turned from the boring, trivial common sense view that it was before Kant, into an exciting, bold and utterly unbelievable conjecture. ...The world of common sense has been torn to pieces: its time is subjective and transcendently ideal and so is its space (Coffa, 188).

We also wonder how Schlick could lodge meaning safely within logical relationships in one paragraph and then go on in the next to talk about meaning and empirical content. Michael Friedman has noted (see Friedman, 1983) that Schlick vacillated throughout his philosophical career between a holistic and formalistic account of knowledge and meaning, and an atomistic and foundationalist account, apparently without ever committing himself completely to either one. Tom Ryckman has written

that Schlick's original linking of thought with reality by means of the notion of *Zuordnung*, or coordination, constituted a very minimalized epistemology:

It is therefore all the more surprising to find him actively engaged, within a decade or so, in a truly traditional dispute over the "foundations of knowledge" (Ryckman, 56).

This latter dispute over the foundations of knowledge is perhaps what we wonder about most of all: why was the exchange between Schlick and his colleagues in the famous protocol debates of the 1930's so bizarre? Carnap, Neurath and Hempel allegedly found a "detestable metaphysics" in Schlick's comparison of a statement in his Baedeker with the number of spires on a certain cathedral; Schlick accused them of being relativistic and rationalistic, as well as irrationalistic, if they could not allow him to determine the truth of the matter by simply checking his guidebook while standing in front of the cathedral.

What was at issue was Schlick's theory of *Konstatierungen*. These were, according to Schlick, our momentary affirmations of reality, which functioned as the foundation of empirical knowledge. However, their foundational authority was short-lived: as soon as they illicit our assent or dissent of a particular claim, they metamorphosed into hypotheses and joined the ranks of all other claims about empirical reality. Schlick's colleagues had dispensed with the idea that we could ever have an absolutely certain foundation of empirical knowledge, and therefore rejected Schlick's theory on the basis of its metaphysical claim about the possibility of comparing statements to facts. Tom Oberdan has pointed out quite correctly that there was a great deal of misunderstanding going on in the debates: "[Schlick] seems to have assumed—incorrectly—that his commitment to conventionalism was apparent to anyone who knew his work." (Oberdan, 18) If Schlick was indeed as committed to a conventionalist account of language and meaning as his colleagues, what then were they arguing about?

There is a growing literature on this topic, which includes many dissections and interpretations of the discussion between Schlick, Carnap, Neurath, and Hempel, on the nature of basic empirical statements and their role in verification (see Haller, Gadol, *Synthese* 64 (1985)). What I would like to focus on specifically is the dual nature of Schlick's major philosophical theses. In the case of Schlick's verificationist theory of meaning, why did he require an account that would be both intersubjectively accessible as well as privately incorrigible? In the case of his 'affirmations of reality,' why did Schlick need to invent, or more modestly, to discover, something that would function as a foundation of knowledge but that would at the same time not clog our systems of conceptual claims with any debris from our perceptual apparatus? I would find this a very frustrating assignment, if asked to create a model fulfilling these terms.

I believe the answer to these questions can be found by exposing the assumptions behind what we can consider to be Schlick's two separate agendas, one formalistic and conventional, the other foundational and empiricist. The agendas are present and fully formed in his earliest philosophical writings. Given that the hypothesis of split personality is not warranted in Schlick's case, the question to ask is, why would he deliberately develop inconsistent lines of thought? What makes the situation interesting is not only that the two agendas are not compatible, which is evident in his early work, but also that Schlick consciously attempted to *make* them work together in his later accounts of meaning and verification. Schlick's conviction that the assumptions in each agenda were equally correct can explain a good deal about the development of his mature theses and is, I believe, responsible for much of the criticism that his work has received, both before and after his death in 1936. Making the two agendas explicit can

also provide us with a better framework within which to judge Schlick's work. Finally, the story provides an instructive example of how one's firmest beliefs constrain and dictate one's choice of solutions and perhaps define the problems themselves.

## 2. Agenda 1

The first agenda had to do with the uncompromising distinction Schlick made between conceptual knowledge and intuitive experience. Although he subscribed to the general empiricist claim that all knowledge stems ultimately from sense experience, Schlick was always careful to point out the vast difference between precisely formulated and enduring concepts as opposed to imprecise and ephemeral intuitive experiences. Schlick sought to clarify this distinction by means of Hilbert's notion of *implicit definition*, whereby the basic or primitive concepts of a system of truths are defined by virtue of the fact that they satisfy the axioms. He contrasted implicit definitions to *concrete definitions*, in which "the defining terminates when the ultimate indefinable concepts are in some way exhibited in intuition...[they involve] pointing to something real, something which has individual existence." (*General Theory of Knowledge*, abbrev. *GTK*, 37) He described the relationship between concrete and implicit definitions as follows:

it is through concrete definitions that we set up the connection between concepts and reality. Concrete definitions exhibit in intuitive or experienced reality that which henceforth is to be designated by a concept. On the other hand, implicit definitions have no association or connection with reality at all.... A system of truths created with the aid of implicit definitions does not at any point rest on the ground or reality. On the contrary, it floats freely, so to speak, and like the solar system bears within itself the guarantee of its own stability. None of the concepts that occur in the theory designate anything real; rather, they designate one another in such fashion that the meaning of one concept consists in a particular constellation of a number of the remaining concepts. (*GTK*, 37)

We begin, then, by assigning concepts to designate specific experiences. Once we have the concept, we can find an implicit definition for it among concepts already incorporated into our system of knowledge. Thus the relationship between the concepts utilized in concrete definitions and sense-experiences is that of names to the objects they name. Our implicitly defined concepts, however, bear no systematic relationship at all to sense-experience.

Besides the influence of Hilbert, Schlick was also following Planck in his separation of conceptual knowledge from intuitive experience. Schlick accepted Planck's mandate that science should move away from descriptions of reality that originate with our sensations and toward a purely quantitative picture of the world. It is for this reason that Schlick also rejected Mach's restriction of science to descriptions of phenomena within the realm of our sensations. Further, following Planck, Schlick agreed that only abstract quantitative formulations could assure a *unified* picture of the world; such a goal could not be reached by focusing exclusively on sense-dependent descriptions. Schlick identified Planck's distinction between the subjective and qualitative as opposed to the objective and quantitative with his own distinction between concepts and intuition.

Consonant with this first agenda was Schlick's abhorrence of any philosophy which elevated the role of non-conceptualized experience or intuition above that of systematically determined concepts, either with respect to questions of truth or to existence. Schlick considered these positions to be direct attacks on scientific thought,

and on any philosophy designed to reflect the scientific spirit. Passages like the following appear repeatedly throughout Schlick's early works:

the arrogant structures of idealist thought, which created the bitterness and brought the philosophic spirit into discredit, have long since crumbled...these doubts about philosophy rest merely upon hasty judgment, upon deliberate neglect of the ultimate problems of science, in short, upon lack of clarity. (*Philosophical Papers*, Vol. I, abbrev. Vol. I, 104)

Clarity, for Schlick, as we have seen, required that knowledge be wholly pruned of its roots in intuitive experience.

### 3. Agenda 2

Schlick's second agenda had to do with the epistemological foundation of empirical knowledge. Under this agenda are his doctrines of *unique coordination* and *verification*.

Schlick considered the notion of *unique coordination* to be the defining characteristic of *truth*; the method to check uniqueness was then *verification*. In his words,

truth is defined by a single, extremely simple characteristic: the uniqueness of the correlation of judgments with facts. (*GTK*, 162)

In "The Nature of Truth in Modern Logic" (1910), Schlick likened the notion of judgment to sensation and ideation, in that all three notions involved designation of some sort. He was expanding on Helmholtz's theory that our sensations are signs of things-in-themselves, not in the sense of images of reality, but by giving us the formal features of the otherwise unknowable noumenal realm. According to Schlick, sensations and ideas are "merely signs for the *content* of experience, the world given to us, without regard to the form in which this content makes its appearance" (*Vol I*, 91) But we are aware of order among our experiences, of the fact that "elements of experience are connected in relations to one another...[that] they possess *order* and *form*." (*Vol. I*,91) Another type of sign is therefore required, not one that is given to us but one which we actively employ to designate the relations among our experiences. Judgments fulfill this function. They are "designations of facts, of forms of experience, of the ordering and association of elements of the given." For a judgment to be true, it must isolate a single fact unambiguously, or, in Schlick's words, "A judgment is true if it univocally designates a specific state-of-affairs." (*Vol. I*, 94) The relationship is not one of similarity or picturing; a judgment cannot be "more than a sign in relationship to a set of facts.... A judgment pictures the nature of what is judged as little as a musical note pictures a tone, or the name of a man pictures his personality." (*GTK*, 60) It is the rather the *interconnection* between judgments that allows an adequate designation of reality:

By virtue of the interconnection of judgments a new truth receives a specific place in the circle of truths; the fact corresponding to this new truth is thereby assigned to the place that, by virtue of the interconnection of facts, it occupies in the domain of reality. ...Hence it is the structural connectedness of our system of judgments that produces the unique coordination and conditions its truth. (*GTK*, 67)

Recall that concepts, for Schlick, were originally connected to experience through concrete definitions. Introducing a concept by means of a concrete definition was a

conventional act, “a quite arbitrary stipulation, and consists in introducing a particular name for an object that has been singled out in one fashion or another.” (GTK, 69) These were contrasted to implicit definitions of concepts within the system of interlocking judgements, which “will then be connected to one another by a system of judgments coinciding fully with the network of judgements that on the basis of experience had been uniquely coordinated to the system of facts.” (GTK, 70)

Schlick’s conviction that this was the case could not have been stronger:

Obviously, to suppose that the world is intelligible is to assume the existence of a system of implicit definitions that corresponds exactly to the system of empirical judgments. (GTK, 70)

So far this fits in with Agenda 1, in that we have only a conventional link between knowledge and experience, through our concrete definitions of concepts. But Schlick’s second agenda also had a new nonconventional element.

The system of empirical judgments was uniquely coordinated to the system of facts on the basis of experience. Schlick called the system of empirical judgments *historical or descriptive* judgments, and distinguished them from *definitions and conventions*. Historical judgments that hold for facts not being immediately observed were *hypotheses*. Schlick noted that this distinction cannot strictly be maintained, however, since “the class of historical judgments dwindles to zero if we consider that strictly speaking it can embrace *only such facts as are immediately experienced in the present moment.*” (GTK, 73; my emphasis) Schlick thus introduced the idea of *fundamental, or perceptual* judgments, to distinguish the judgments embracing “immediately experienced facts” from other descriptive or historical judgments: these were the ‘building blocks’ of the system, the “propositions...by virtue of which the system rests directly on real facts.... If the whole edifice is correctly built, then a set of real facts corresponds not only to each of the starting-points—the fundamental judgments—but also to each member of the system generated deductively.” (GTK, 78)

#### 4. Schlick’s Early Account of Verification

In Schlick’s early account, verification is the method to check for *uniqueness of coordination* between judgments and facts, which, as we have seen, is the defining characteristic of truth. What is involved in verification, according to Schlick, is the identity of two judgments, one of which must be a fundamental or perceptual judgment, as just described.

Schlick first illustrated his account of verification with an example from the history of science, also in his (1910) article, “The Nature of Truth in Modern Logic.” He explained that the verification of the existence of the new planet Neptune consisted in the identity that obtained between the prediction that a certain planet would be found and the perceptual judgment made at the time that it was first observed. The prediction was deduced by Leverrier from Newtonian law and observed facts about the perturbed orbit of Uranus. When Galle looked through the telescope and perceived the presence of a planet exactly where it was predicted to be, the perceptual judgment that he formed upon making this observation was identical to the prediction-judgment originally formulated by Leverrier.

Later in the *General Theory of Knowledge*, Schlick presented a more detailed analysis of what happens when a judgment is verified. The procedure to verify an arbitrary assertion about reality,  $J$ , is as follows, where  $J'$ ,  $J''$ , ... are auxiliary assumptions:

- (A) Derive  $J_1$  from  $J$  and  $J'$ , where the truth of  $J'$  is considered established, for one of the following reasons:
- (i)  $J'$  is an assertion about reality
  - (ii)  $J'$  is a definition
  - (iii)  $J'$  is a purely conceptual proposition
- (B) Derive  $J_2$  from  $J_1$  and  $J''$  ... until finally  $J_n$  is derived, which is a prediction in the following form:

“At such and such a time and at such and such a place under such and such circumstances such and such will be observed or experienced.” (GTK, 163)

- (C) At the appointed time and place, we make a perceptual judgment,  $P$ . If  $P$  and  $J_n$  are identical then  $J_n$  is verified, and so is the original judgment  $J$ .

Since both  $P$  and  $J_n$  designate the same fact, even though we arrived at them through “two entirely different paths,” we have, according to Schlick, established a unique correlation. The judgment is therefore true. (GTK, 163) Thus, when  $J_n$  and  $P$  designate the same fact, we may consider the original  $J$  to be true. But in order to do this, we must first accept  $P$  to be true. Schlick considered the truth of  $P$  noncontroversially established as the expression of the fact. In other words, for  $J_n$  to be correlated with the fact, it simply had to be identical with the perceptual judgment  $P$  that designated this fact. But, if verification is the method by which we establish the unique coordination between a judgment and a fact, thereby establishing the truth of the judgment, how can we then simply accept that the ‘perceptual judgments’, or judgments of experience are themselves true? The perceptual judgment  $P$ , which embraces “immediately experienced facts” is not in need of verification itself, according to Schlick.

Schlick also stated that not only is the original claim  $J$  verified, but also the whole chain  $J_1, J_2, \dots$ , leading up to the prediction-judgment  $J_n$ :

since the last member of the chain of judgments led to a unique correlation, we take this as a sign that the other members, hence the starting-point and the endpoint  $J$ , also fulfill the truth condition, and we count the entire process as a verification of judgment  $J$ . (GTK, 163)

An identity of two judgments was also the basis of the verification of purely conceptual or analytical judgments, for Schlick (GTK, 166). What is involved in our recognition of an identity in either case is some kind of intuitive process, a mental picturing of the sense of the proposition. But even though empirical and purely conceptual statements share an identity experience at the end of verification, “a vast difference separates these two classes of judgments, an abyss that no logic or epistemology can bridge.” (GTK, 168) Verification of empirical judgements can only be probable rather than certain. Schlick gave two accounts of the source of the uncertainty of empirical judgments. One considered the inductive problem of knowing the future: this is the problem of relying on the law-like regularities of nature in our assertions about reality. Since a true proposition should be confirmed “always and without exception...what we can infer, strictly speaking, from a limited number of verifications is not absolute truth but only probability (GTK, 168).”

The second source of uncertainty cited by Schlick, in a later passage in the *General Theory of Knowledge*, is that associated with the imprecise nature of intuitive experience:

Due to the fleeting character of experiences, this act of comparing and finding the same is always subject to an uncertainty that, although harmless and of no significance for the practical conduct of science and everyday affairs, is always present theoretically and stands in the way of absolute infallibility. (*GTK*, 342)

Schlick needed a nonconventional link between his perceptual judgments and the facts of experience to make his account of verification work. But verification was supposed to *produce* this assurance that our judgments are true of reality. Schlick knew that he could rely on the certainty produced through manipulations of his *implicitly* defined system of conceptual judgments, and that his originally concretely defined concepts did not contaminate the system with extra-linguistic uncertainty. But his account of *truth* required the confrontation of a perceptual judgement with an extra-linguistic state-of-affairs. The experience linking one's judgments to reality had to provide the basis of one's designation by Schlick's foundational Agenda 2. But, experience with respect to Schlick's formalistic Agenda 1 was not to be trusted; specifically, it was not to be considered knowledge at all. Coffa wrote:

It would be hard to exaggerate the significance of this difficulty....the link between knowledge and reality depends entirely upon the link between basic statements and reality, and, as Schlick's example illustrates, it was widely assumed that the key to this link was experience. (Coffa, 356)

And we note a profound ambivalence in Schlick's attitude toward experience.

## 5. Meaning and Affirmation

We can see Schlick's two agendas still working in his later account of verification, which he presented in articles written from the late 1920's to the middle 1930's. What is new, following Schlick's acquaintance with Wittgenstein's work, is a focus on *meaning* as well as on *truth*. Schlick distinguished now between verifiability and verification: *verifiability* referred to a criterion of the *meaningfulness* of a statement; it was a purely philosophical notion having to do with the logical possibility of a corresponding state-of-affairs. *Verification* referred to a procedure for establishing the *truth or falsity* of a statement; it was a scientific activity having to do with the empirical possibility of confirming a particularly occurring state-of-affairs. (see *Vol. II*, (1936), and *The Problems of Philosophy in Their Interconnection*)

Schlick's discussion of meaning in terms of verifiability for the most part follows the holistic assumptions built into his Agenda #1; his discussion of truth in terms of verification follows those of his foundationalist Agenda #2. But in each there is a struggle that is not evident in his earlier work. Schlick raises questions in each account that show that he is trying to accommodate his commitment to a conventionalist account of knowledge along with his conviction that perceptual judgments can be considered true records of "immediately experienced facts."

Schlick wanted to show that what is meaningful is not based on private psychological experiences but on publicly accessible information. He wrote that "it would be nonsense to say 'We can mean nothing but the immediately given.'" (*Vol. II*, 462) What is required when we give the meaning of a sentence is a knowledge of the rules that tell us how the sentence is to be used: these include both *ordinary definitions*, in

terms other than the term itself, and *ostensive definitions*, which Schlick formerly called 'concrete definitions'. Schlick stated that "there is no way of understanding any meaning without ultimate reference to ostensive definitions, and this means, in an obvious sense, reference to 'experience' or 'possibility of verification'." (*Vol. II*, 458) He admitted that he had insisted both on an "empirical-meaning requirement" and on the fact that "meaning and verifiability do not depend on any empirical conditions whatever, but are determined by purely logical possibilities." (*Vol. II*, 467) He dealt with this apparent contradiction himself by explaining that the problem stems from the ambiguous use of the term 'experience.' It is used in one sense to refer to 'immediate data', and in another sense, the sense in which Hume and Kant used the word, to refer to the process by which we gather information inductively (*Vol. II*, 468). Schlick's 'ostensive definitions' are the link between his two senses of experience: "through them verifiability is linked to experience in the first sense of the word. No rule of expression presupposes any law or regularity in the world...but it does presuppose data and situations, to which names can be attached." (*Vol. II*, 468) So verifiability is not 'independent of experience' with respect to immediate data, but only with respect to experience as inductive learning. In other words, there is no Kantian synthetic *a priori* knowledge about the laws of nature, but an account of meaning must presuppose the immediate data of sense-perception.

In Schlick's ultimate discussions of verification as a criterion of truth, we find assumptions associated with his second foundational agenda. What is new here is his reference to our moments of perceptual certainty as *Konstatierungen*, or 'affirmations' of reality. We know that for Schlick "all verifications terminate in perception" (see above); it is *Konstantierungen* which function as these endpoints, and which fulfill the same role that his perceptual or fundamental judgements did in his early account. They have, according to Schlick, the "positive value of absolute certainty and the negative value of being useless as an enduring foundation." (*Vol. II*, 386) It would be absurd to question the validity of observations made by oneself, in the present, according to Schlick: we may therefore consider our current and subjective experiences as absolute indicators of the truth or falsity of empirical claims. Schlick's colleagues read his 'affirmations' as basic *statements*, subject to all of the criticisms levelled against Carnap's original construal of incorrigible protocol sentences. Neurath had pressured Carnap into a modified version of protocols as statements which were as fallible as any other empirical statements; they were simply *chosen* as basic statements. A number of writers have noted that had Schlick presented his 'affirmations' unambiguously as perceptions rather than as a type of perceptual *statement*, the debates would have taken a different turn, or perhaps not have occurred at all. (see Oberdan, Chisolm and Hilpinen in Haller) Schlick's position is at least consistent with his Agenda #1 if affirmations are merely the perceptual moments that illicit linguistic responses, rather than statements themselves. They remain outside of science for the reason that they remain outside of language in general:

Science does not rest on them, but leads to them, and they show that it has led aright. They are really the absolutely fixed points; we are glad to reach them, even if we cannot rest there. (*Vol. II*, 383)

The phrase 'absolutely certain foundation' was also guaranteed to ruffle his colleagues' philosophical feathers, and they viewed Schlick as stubbornly hanging on to an outdated correspondence theory of truth. But was this criticism warranted? In what sense do Schlick's affirmations provide an absolutely certain foundation of knowledge?



The question behind the problem of the absolutely certain foundation of knowledge is, so to speak, that of the legitimacy of the satisfaction which verification fills us with. Are our predictions actually realized? In every single case of verification or falsification an 'affirmation' answers unambiguously with yes or no, with joy of fulfillment or disillusion. The affirmations are final. (*Vol. II*, 383)

Schlick's finality has to do with a personal sense of fulfillment or disillusion, not with an incorrigible base of knowledge. While it appeared to others that Schlick retained a Cartesian desire for certainty about the empirical world, Schlick had settled for momentary flashes of perceptual certainty rather than the constant but distant illumination of a self-evident principle.

## 6. Concluding Remarks

If Schlick's colleagues misunderstood his commitment to a formalistic account of knowledge and meaning, they also misread his account of verification by affirmation as producing certain rather than probable truth. As we have seen, Schlick had given a detailed analysis of the verification of judgments of reality in his *General Theory of Knowledge* in terms of probability rather than certainty and very likely assumed that his remarks about an empirical foundation of knowledge were read in this light. Schlick considered his role in the debates "nothing but a gentle warning of a true empiricist against certain tendencies towards...a rather dogmatic irrationalistic formulation of positivistic principles." (*Vol. II*], 400) We may note that Schlick preferred the label 'consistent empiricist' to 'logical positivist' (see *Vol. II*, 283). A consistent empiricist would tend to be interested in what we actually do when we say that we know something, and how we got that information. *Konstatierungen* are, after all, not a bad *description* of what happens when we decide to affirm or deny a particular claim. Schlick's ideas do not even sound that far out of line with current views on perception and cognition. With respect to his conviction that the experiential foundation of knowledge could not be considered part of knowledge itself, since it lacked the precision of linguistic concepts, compare the following passage by Patricia Churchland in her book, *Neurophilosophy*:

Although some cognitive activity probably is understandable as the manipulation of sentential representations according to logical rules, many cognitive processes likely are not. Indeed, the processes underlying sentential representation are surely themselves nonsentential in nature. (Churchland, 452)

With respect to Schlick's apparent ambivalence about the linguistic status of his perceptual judgments, or affirmations, compare this statement by Gerald Edelman in *Neural Darwinism*:

Perception...is close to the interface between physiology and psychology...[it] involves categorization, a process by which an individual may treat nonidentical objects or events as equivalent. (Edelman, 26)

We have become accustomed to distinguishing between those who deal in empirically equivalent theories and those who have faith in our ability to 'get it right', in our potential someday to fashion a true description of reality. Schlick understood well that knowledge could encompass competing theories (see *Vol. I*, (1915)), but was also convinced that the role of perception in verification was to guide us in theory selection, ultimately to better theories. We tend to read the second sentiment as an override on the first, as if wanting to 'get it right' precludes acknowledging the hypotheti-

cal nature of our knowledge. Schlick watched his colleagues suffer from the unique hubris of the logical empiricist, which made it impossible to avoid murdering one's empiricism and marrying one's logic. Perhaps Schlick's hubris was of a different sort. Perhaps what fueled his conviction that both his logical and empirical agendas were correct was his very strong desire for clarity and precision at all costs. Verification, for Schlick, was the only road to clarity and precision on the empirical front; keeping conceptual knowledge systems floating above the empirical ground guaranteed clarity and precision on the logical front. The price for each of these assumptions, however, was to give up absolute certainty about the empirical world. This, as we have seen, Schlick was willing to do.

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