

Foundationalism and Empirical Reason: On the Rational Significance of Observations

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I. Introduction

1. Some things we accept and are rational in accepting are derivative—that is, we accept these things because of derivations based on other things we are rational in accepting. The truth of Pythagoras’ theorem, for example, is not immediately evident to us; it becomes evident only when we see a proof of the theorem. The proof deploys propositions we antecedently accept and goes on to establish Pythagoras’ theorem on their basis. Similarly, to give an empirical example, the truth of the proposition “at least twice every year, a solar eclipse is visible from some place on the globe” is not immediately evident to us; it becomes evident only when we see that the proposition is a consequence of astronomical facts (such as the actual tilt of the moon’s orbit) and geometrical laws. So, our acceptance of a derivative proposition Q is founded on our prior acceptance of certain other propositions; and if our acceptance of Q is rational, it is so, in part, because our prior acceptance of these other propositions is rational. There is, thus, an epistemologically significant relation of *priority* that relates propositions—*derivational priority*, as we might call it when we wish to distinguish it from other priority relations. When our acceptance of a derivative proposition Q is rational, it is so because we derive Q in a rationally compelling way from a class of propositions that are prior to Q and that we are rational in accepting.

2. Things we accept change over time. Freeze a moment of time m and let A_m be the set of propositions we accept at that moment. Then, it is *the core thesis* of foundationalism that the relation of derivational priority (symbolically: “ $<_m$ ”) over A_m possesses the following two logical

characteristics:¹

- (I) it is a strict partial ordering—that is, it is asymmetric (if $P <_m Q$ then $Q \not<_m P$), and it is transitive (if $P <_m Q$ and $Q <_m R$ then $P <_m R$); and
- (ii) it contains no downward descending chains that are infinite; that is, no infinite sequence $\langle P_i \rangle$ of propositions exists such that, for all natural numbers i ,
$$P_{i+1} <_m P_i$$
²

The accepted propositions thus fall into a foundational structure. If you begin with any proposition P higher up in the structure and trace back to a proposition Q that is prior to it, and then beginning with Q move to a proposition prior to it, and so on, you will end up in a **basic** (equivalently: **foundational**) proposition, one to which no proposition is prior. Let us call propositions that are not basic **derivative**, and let us say that a proposition is **warranted** (or has **warrant**) iff its acceptance by us is rational.³ Then, a derivative proposition Q is warranted iff there is a rationally compelling derivation of Q from warranted basic propositions.⁴

3. Let us say that a set of propositions $\{P_1, \dots, P_n\}$ **implies** a proposition Q iff there is a rationally compelling derivation of Q from P_1, \dots, P_n ; that is, iff the acceptance of P_1, \dots, P_n forces a commitment to Q , and the only way to avoid this commitment is to suspend acceptance of the conjunction of P_1, \dots, P_n . Let us note that the notion of compulsion in play in this characterization cannot be defined in terms of the broad combinatorial notion of possibility

¹The relation of derivational priority may change over time; hence, the index m on ‘<’.

²These constraints on priority are strong, and one may want to weaken them. My aim in this essay is to show how a viable foundationalism can be obtained even when we impose strong constraints on priority. If I am successful in this, it will be easy enough to adapt the scheme to weaker constraints.

³Similarly, a proposition is **warranted for** a person p iff its acceptance by p is rational.

⁴The notions “basic,” “warranted,” and so on all contain a relativity to moments of time. Here and below, I often leave this relativity tacit. Also, a more sophisticated, and thus more complex, foundationalist theory would work with degrees of warrant. In this essay, I explore the prospects for a simpler, less complex foundationalism.

familiar from formal logic; nor can it be defined in terms of “metaphysical possibility.” The notion of compulsion (and thus of implication) in play here is distinctive, and it needs to be spelled out by a foundationalist theory of empirical reason. Let us note also that rationally compelling derivations generally consist of constituent derivations, each of which is rationally compelling. For example, a rationally compelling derivation may consist of a series of applications of modus ponens.

For each derivative proposition Q , there is a *derivational basis for Q* —that is, a set of basic propositions $\{P_1, \dots, P_n\}$ that implies Q but no proper subset of $\{P_1, \dots, P_n\}$ implies Q . Note that a derivative proposition may be derivable from several different derivational bases, just as a theorem in arithmetic can be derived from several quite different sets of arithmetical axioms.

4. It deserves emphasis that warrant “flows” upwards in the foundationalist structure, never downwards. The warrant of basic propositions accounts for the warrant of propositions in the superstructure, not the other way around. It can happen that some basic propositions P_1, \dots, P_n imply a derivative proposition Q , and Q in turn implies P_1, \dots, P_n . In such a situation, it is the rational acceptance of P_1, \dots, P_n that renders the acceptance of Q rational, not the other way around. Warrant does not flow from Q to P_1, \dots, P_n ; in particular, the co-implication does not render the acceptance of P_1, \dots, P_n “more rational.” It is a feature of competitor *coherence* theories that they allow the possibility that such co-implications render the acceptance of P_1, \dots, P_n more rational. These theories deny the tidy flows of warrant envisioned in the foundationalist scheme. As coherence theories see it, warrant accrues to a proposition solely from its logical relationships to certain other propositions.⁵ It follows that coherence theories must deny the existence of basic propositions. For if the warrant of a proposition Q has its source solely in its logical relationships to propositions P_1, \dots, P_n , then P_1, \dots, P_n must be prior to Q and Q cannot be basic.

⁵Roderick Firth, “Coherence, Certainty, Epistemic Priority,” p. 168: “The heart of the coherence theory of justification . . . is the thesis that *ultimately* every statement that has some degree of warrant for me has that particular degree of warrant because, and only because, it is related by valid principles of inference to (that is to say ‘coheres with’) certain other statements.”

5. Foundationalist theories must provide answers to two key questions. First, which propositions are basic? And, second, in virtue of what do warranted basic propositions come to acquire warrant? That is, what is it that renders their acceptance by us rational? Whatever this is, it cannot be the same as that which renders the acceptance of derivative propositions rational. The warrant of derivative propositions lies, in part, in their derivation from propositions that are prior. For basic propositions, by definition, there cannot be such a derivation. Hence, there must be two quite different sources of warrant, one that imparts warrant to derivative propositions and the other that imparts warrant to basic propositions. And it is the second source that is the more important, for without it, no derivative proposition would be warranted. The warrant of derivative propositions is itself derivative; it is, so to speak, a reflection of the warrant of basic propositions.

I consider several prominent answers to the key questions in Parts II-IV, paying particular attention to what is perhaps, at first sight at least, the most attractive form of foundationalism (called “natural foundationalism” below). I will be arguing that this foundationalism is untenable. In Parts V-VI, I provide a sketch of an alternative conception, deferring a more detailed presentation to a later essay.

II. Natural Foundationalism

6. The most common and most ancient answer to the two key questions is that it is perception that delivers basic propositions and confers warrant on them.⁶ Roughly, the idea is that we are in possession of two different capacities: a capacity for perception that provides us with materials for thinking, including warranted propositions; and a capacity to reason that enables us to extend our cognitive reach on the basis of materials supplied by perception. Different treatments of

⁶Aristotle, *Posterior Analytics* I.19, 100^a10–11: “Thus the states in question [that is, knowledge of primitive immediate principles] neither inhere in us in a determinate form nor come about from other states which are more cognitive; rather, they come about from perception.”

perception yield different types of foundationalism within this broad scheme. Let me mention two treatments that have been highly influential, but that I wish to set aside. First, it has been held that we perceive relations between universal and, thereby, come to know substantive principles. This kind of foundationalism—*Platonist foundationalism*, to give it a name—has the advantage that it allows us to treat some principles as basic. However, the advantage is gained too cheaply and too easily. One wishes for a richer and more revealing account of how we rationally arrive at principles. Second, it has been held that perception provides us with knowledge not of ordinary things but of appearances, which are conceived as subjective entities or states. This idea, too, results in a distinctive type of foundationalism—*Cartesian foundationalism*, as we may call it. I believe that this type of foundationalism has powerful reasons motivating it.⁷ Still, I concur with the common assessment that perception on this type of view provides materials too thin to support the foundationalist superstructure.⁸ I focus in this essay on an account of perception that is closer to common sense. I will call it *the natural account*, and I will call the version of foundationalism the account yields *natural foundationalism*.

7. According to the natural account, we are presented in perception with a portion of the world, and this presentation renders rational some of our perceptual judgments. For example, your visual experience may present you with two blue birds sitting in a window and it may prompt you to issue such judgments as “those birds are blue,” “I see that two birds are sitting in a window,” and “it looks to me as though there are blue birds.” According to the natural account, your judgments are rendered rational by your visual experience.⁹ Let us call judgments of the

⁷See my *Empiricism and Experience*, chapter 2, and *Conscious Experience* (henceforth, *CE*), §§182–183.

⁸Russell subscribed at one time to a view that combined both kinds of foundationalism, Platonist and Cartesian. Russell compensated for the thinness of materials supplied by sense-perception under Cartesian foundationalism by positing a Platonic acquaintance with universals. See his *Problems of Philosophy*.

⁹Some terminological clarifications: I am taking it that in perception a subject undergoes an experience. Other things may also be going on in perception (e.g., at the subconscious level), and these may be vitally important for the well being of the subject. However, I use ‘experience’

first sort *external perceptual judgments*, those of the middle sort *reflexive perceptual judgments*, and those of the last sort *appearance judgments*. Let us understand *perceptual judgments* to consist of judgments of all three sorts. Then, it is a feature of Cartesian conceptions of experience that they take experience to render rational only appearance judgments. Some Cartesian accounts go a step further and take experience to present only appearances, which they take to be the fundamental constituents of the world. The natural account rejects all this and holds that things in the external world (e.g., birds) can be presented in experience. And it maintains that experience can render rational all three kinds of perceptual judgments.¹⁰

8. Let us understand “perceptual judgment” broadly to include perceptual beliefs. On seeing the birds in the window, you may accept “those birds are blue” silently, without affirming anything out loud. Still, you qualify as accepting the judgment “those birds are blue,” and according to the natural account, your acceptance is rendered rational by your visual experience. Let us call propositions accepted in perceptual judgments, broadly construed, *observational*. Then, according to the natural account, perception confers warrant on observational propositions of very many types, including the following:

- subjective (“I am in pain”) and objective (“I am in the Presbyterian Hospital”);
- *appearance* (“it looks to me as though something is blue”) and *external* (“something is blue”);

to capture those aspects of perception that are crucial for empirical reason and rationality. Furthermore, I use interchangeably such pairs of phrases as “perception renders such-and-such rational” and “experience renders such-and-such rational.”

¹⁰There is in the current literature in the philosophy of perception a major divide over the proper treatment of presentation. Some argue for a *relational* treatment while others argue for a *representational* one. The former take the experiencing subject to stand in a particular relation to certain worldly items, while the latter take the experiencing subject to possess a specific kind of representation with a certain content. I am letting the natural account stay neutral on this dispute. For a relational treatment of perception, see John Campbell *Reference and Consciousness*; and for a representational one, see Christopher S. Hill, *Consciousness*. For a view that draws on both paradigms, see Susanna Schellenberg, “Perceptual Content Defended.”

- simple (“Fred is sitting”) and logically complex (“two birds are sitting in a window”), including negative ones (“that’s not a red bird”);
- *incomplete* (“there is lightning”) and *complete* (“at noon GMT on January 1, 2019, there is lightning above London, England”);¹¹
- present as well as past (“a meteor hit Jupiter more than thirty minutes ago”);
- containing only purely observational concepts (“that is blue”) and those containing one or more theoretical concepts (“two amps of current is flowing through this wire”);¹² and
- *reflexive* (“I see that there are two birds”) and other *higher-order* ones (“you see two birds,” “we see that there are two birds,” and “he says he saw two birds in a window”).

In short, unlike traditional conceptions, natural foundationalism takes an expansive view of propositions that can receive warrant from experience and count as observational. In particular, warranted observational propositions are not confined to those that are indubitable or incorrigible.

Despite their large variety, observational propositions are, it should be stressed, about restricted subject matter. Perception can confer warrant on the proposition one accepts about, say, the color of some birds. It cannot confer warrant on a proposition about the color of all birds—past, present, and future.

9. One important clarification: the natural account recognizes that the presentation of the world in experience is conditioned by many factors. Thus, for example, your experience of the birds in the window is conditioned by your location relative to the window and the birds—by how far you are from these things and by the angles at which you are viewing them. And, of course, the

¹¹Imagine that one issues the perceptual judgment with the complete content when one is in Trafalgar Square and a clock that displays the date and time is within one’s visual field.

¹²Imagine that the perceptual judgment with the theoretical content is issued when one is looking at an ammeter connected to the demonstrated wire and the ammeter is giving the reading “2 amps.”

experience is conditioned by many other additional factors (e.g., the condition of the vitreous gel in your eyes). So, the presentation of the world in perception is not a *bare* presentation; it is a *conditioned* presentation. And because of this conditioning, the presentation can be misleading. It can prompt the subject to issue false perceptual judgments (as sometimes happens when a subject is suffering an illusion, for example). The natural account recognizes all this and holds that even in cases in which perceptual judgments are mistaken, perception can confer rationality on the judgments.¹³

So, in short, according to the natural account, there is a conditioned presentation of the world in perception, and this presentation confers rationality on a range of perceptual judgments.

10. A naive view of perception would see all observational propositions as receiving warrant from experience. The natural view is more sophisticated, however. It holds that perception confers warrant on *some* external observational propositions, not necessarily *all* of them.¹⁴ (The same goes for reflexive observational propositions.) A subject may have accepted expert testimony that the lighting conditions are abnormal, but he may slip and, neglecting the testimony, he may issue a false perceptual judgment about the color of (e.g.) a bird. The natural account is not committed to saying that perception confers warrant on the observational proposition our subject accepts. Had the subject not accepted the expert testimony, the subject's experience would have conferred warrant on the proposition. As it is, the subject accepts expert testimony, and this blocks the conferral of warrant. So, the natural account recognizes that a subject needs to possess suitable beliefs and suitable concepts (in short, a suitable *view*) in order for experience to confer warrant on observational propositions. Absent a suitable view, perception will fail to confer warrant. When the subject possesses a suitable view, however, then, according to the natural account, perception does confers warrant on observational propositions.

¹³For a relationalist treatment of conditioned presentation, see Bill Brewer *Perception and Its Objects*; for a representationalist treatment, see Hill, "Content of Visual Experience." For the treatment I favor, see "Outline of an Account of Experience" or the more extended exposition in *CE*, chapters 5 and 6

¹⁴For views of this kind, see for example, James Pryor, "The Skeptic and the Dogmatist" and "Merits of Incoherence."

It is important to note that, according to the natural account, perception is the *source* of rationality. A perceptual judgment does not inherit rationality from some prior rational elements in the view; it gains rationality from its relationship to experience. As the natural account sees it, the rationality of perceptual judgments is *original* rationality, which is then transmitted to other elements through logical linkages.

Let us understand the dictum “experience confers warrant on the observational” as summing up the account of perception outlined above.

11. Let us understand *natural foundationalism* to be the position that consists of the core thesis (§2) and the following further ideas:

(NF1) All basic propositions are observational.

I do not wish to build the converse of (NF1) into natural foundationalism, for I wish to leave open a possible development on which incomplete observational propositions (e.g.) are excluded from the foundationalist base.

(NF2) Theories and principles of the sciences are derivative; they belong in the foundationalist superstructure.¹⁵

This thesis is a consequence of the idea that theories and principles are about broader subject matter than any set of observational propositions. The next thesis traces the warrant for theories and principles to that of observational propositions:

(NF3) Theories and principles of the sciences are warranted only so far as the observational renders them so.

¹⁵I am confining myself to theories and principles that are substantive and synthetic. More generally, my main concern in this essay is with foundationalism about synthetic, empirical things we accept. I am not concerned with the analytic propositions we accept, for example.

We thus arrive at the following important thesis concerning empirical reason:

(NF4) There must be nondeductive inference rules (e.g., induction and inference to the best explanation) that link basic observational propositions to the theories and principles of the sciences.

These inference rules ground the warrantedness of theories and principles on that of observational propositions. Natural foundationalism contains one further thesis:

(NF5) Experience confers warrant on the observational.

Let the dictum “the observational is foundational” stand for the conjunction of (NF1)–(NF4). Then we can think of natural foundationalism as consisting of the following two dicta:

The first dictum: The observational is foundational.

The second dictum: Experience confers warrant on the observational.

The broad idea captured by these dicta is, I believe, widely accepted. My remarks above on the natural account of perception were aimed at clarifying and sharpening what I take to be a generally accepted conception, not at putting a novel one in play.

12. Natural foundationalism is closer to common sense than its traditional counterparts. First, it bypasses the traditional external-world program of establishing the rationality of our commonsense beliefs on the basis of thin subjective materials. It allows that propositions about the external world can possess warrant simply through perception, without the aid of any inferences.¹⁶

Second, the internal logic of traditional foundationalism requires that it concern itself, in

¹⁶Natural foundationalism is in line with the position sketched in Robert Audi’s “Contemporary Foundationalism.”

the first place, with beliefs of particular persons.¹⁷ Not so for natural foundationalism. We can give natural foundationalism a personal cast if we wish, but there is nothing in it that requires us to do so. Indeed, it is a virtue of natural foundationalism that it is easily given a social cast. We can see natural foundationalism as an account of things that are accepted by a particular *community*, where the community is understood to be closed under epistemic deferential relations.¹⁸ Basic propositions are now those that are observational for the community.¹⁹ These propositions receive their warrant from the perceptions of community members, and they transmit the warrant to the propositions in the superstructure by the inference rules, including nondeductive ones. So, for example, the perceptions of the community members confer warrant on the observational propositions the community accepts about moving bodies. Then the nondeductive inference rules transmit this warrant to the laws of motion the community accepts.

¹⁷It is this that led Russell to want to found physics on a solipsistic basis (“Relation of Sense-Data to Physics,” p. 152).

¹⁸The community of chemists, for example, is not closed under epistemic deferential relations. For this community accepts claims about (e.g.) atomic constituents of matter on the authority of a community that is no part of it (namely, the community of physicists). The warrant for the claims about the atomic constituents cannot be seen as issuing from the observations of the chemists.

A modified natural foundationalism may, nevertheless, be a useful model for smaller communities. Here one allows certain propositions to belong to the foundationalist base that the community accepts on authority—perhaps on the basis of things accepted in other communities. (The same sort of modification yields useful versions of personal-level foundationalism.)

¹⁹“Observational for a community” depends on observations made by individual community members, but the dependence is complex, and fortunately, my purposes here do not require that I provide an account of it. Let me note, though, some possible theses that might be held about the dependence. Let Q be observational for a community C . Then, it may be held that each member of C must have judged perceptually that Q . A more plausible idea, however, is that the designated experts in C (or a suitable subset of them) have each judged perceptually that Q or, alternatively, that they have judged perceptually “we all perceive that Q .” (Recall that, according to natural foundationalism, higher-order propositions can be observational.) And we obtain a yet more plausible idea if we allow propositions observational for the community to be founded on past experiences. That is, we allow a proposition such as “it rained last Monday” to count as observational (and warranted) for the community on Friday when a suitable set of the designated experts judge perceptually (and rationally) on the Monday in question “today is Monday and it is raining today.” (A similar move yields a more plausible version of a personal-level foundationalism.)

III. Coherentist Foundationalism

13. It will improve our appreciation of natural foundationalism if we compare it to a rival view, one put forward by Wilfrid Sellars. Sellars rejects, as a part of his broader condemnation of the given as mythical, the idea that experience confers warrant on observational propositions.²⁰ Experience, according to Sellars, does not provide the subject with any items of knowledge, and it is not an original source of rationality or warrant. Sellars subscribes to a modified coherence theory of empirical knowledge. Warrantedness, for him, is grounded in explanatory coherence.²¹ Nonetheless, interestingly, Sellars also accepts a form of foundationalism. In §38, perhaps the most famous section in “Empiricism and the Philosophy of Mind” (henceforth, EPM), Sellars writes:

If I reject the framework of traditional empiricism, it is not because I want to say that empirical knowledge has *no* foundations. For to put it this way is to suggest that it is really ‘empirical knowledge so-called’, and to put it in a box with rumours and hoaxes. There is clearly *some* point to the picture of human knowledge as resting on a level of propositions—observation reports—which do not rest on other propositions in the same way as other propositions rest on them. On the other hand, I do wish to insist that the metaphor of ‘foundation’ is misleading in that it keeps us from seeing that if there is a logical dimension in which other empirical propositions rest on observation reports, there is another logical dimension in which the latter rest on the former.²²

²⁰I understand “the given in *X*” to mean the total rational contribution of *X* to cognition, and I read Sellars as holding that though experience (and, in particular, its non-conceptual aspect) plays a vital causal role in cognition, it plays no rational role.

²¹“More on Givenness and Explanatory Coherence” (henceforth, MGEC), §42

²²Sellars’s account of perception undergoes significant changes after the publication of EPM (1956). This passage captures, nonetheless, an important and enduring element in Sellars’s view. Sellars himself endorses this passage and quotes from it in “Structure of Knowledge” (1975; henceforth, SK) and again in MGEC (1979). I will feel free, therefore, to use Sellars’s later works in interpreting this passage.

Sellars is rejecting here foundationalism of the sort embraced in traditional empiricism—Cartesian foundationalism, as I called it above. However, he endorses a foundationalism that sees empirical knowledge as resting on observations. He accepts the idea that the theoretical lies in the foundationalist superstructure. He accepts also that nondeductive inference rules link the observational with the theoretical. In effect, Sellars accepts one of the two dicta that make up natural foundationalism: that the observational is foundational.²³ He rejects only the second dictum, that experience confers warrant on the observational. And even here, Sellars accepts the idea that observational propositions possess *non-inferential* warrant (MGEC, §42). His disagreement with natural foundationalism is really only on one point: the source of this non-inferential warrant. Natural foundationalism sees this warrant as issuing from experience; Sellars does not.²⁴ Sellars provides a different account of how observational propositions acquire non-inferential warrant, an account I sketch below. Sellars characterizes his position as a coherentist theory. It is equally apt, I think, to characterize it as a foundationalist one, though of a special sort: a *coherentist foundationalism*.

14. Two points in the above passage are worthy of special attention:

- (i) Sellars provides an argument for a foundationalist structure. According to Sellars, we must accept the existence of this structure—indeed, we must accept that the

²³In the above passage, Sellars talks about the foundations of *knowledge*, and this may create doubt whether he accepts the first dictum, which concerns a foundationalism about warrant and rationality. The foundationalist structure Sellars accepts, it may be said, is one in which basic propositions must be knowledgeable, not merely warranted. As I read Sellars, however, the foundationalist structure underpinning knowledge is indeed one that concerns warrant and rationality. For, first, Sellars often focuses on warrant and what he calls *reasonableness* (which I take to be the same thing as what I am calling *rationality*). For example, in MGEC, Sellars’s principal concern is to understand the reasonableness of perceptual judgments. For another example, the epistemic principles endorsed in “Structure of Knowledge” all concern reasonableness. Second, according to Sellars, basic observation reports can be false. So, Sellars allows the foundationalist base to contain propositions that are not known to be true.

²⁴The point that Sellars does not see experience as conferring warrant on observational propositions is confirmed by the evolving accounts he offers of experience. Neither on the account offered in EPM nor on that offered in “Some Reflections on Perceptual Consciousness” (1978) can experience possess the power of conferring warrant on observational propositions.

observational is foundational—for otherwise, we would be putting empirical knowledge “in a box with rumours and hoaxes.” If this is right then we have here a strong argument for the idea that the observational is foundational.

- (ii) Toward the end of the passage, Sellars speaks of a “logical dimension,” different from the one along which the foundationalist structure lies. In this dimension, Sellars tell us, the observational propositions rest on propositions in the foundationalist superstructure.

I will comment on (i) later (§§46–47). For now, let us focus on (ii), the second “logical dimension,” which is crucial to Sellars’s embrace of the coherence theory as well as to his explanation of the non-inferential warrant of observational propositions.

15. The second logical dimension has its roots in Sellars’s account of concepts and concept possession. Sellars rejects the traditional empiricist account of concepts such as “green,” according to which the content of “green” is the color quality green (on some versions, the concept *is* the quality green) and to possess the concept is to know the denotation of the concept (which knowledge is provided by experience). Sellars espouses, in place of this denotational account, an account according to which the content of a concept is determined by its role in the conceptual system and to grasp the concept is to grasp this role. Concerning the concepts “looking green” and “being green,” Sellars says,

the concept of *looking green*, the ability to recognize that something *looks green*, presupposes the concept *being green*, and . . . the latter concept involves the ability to tell what colours objects have by looking at them—which, in turn, involves knowing in what circumstances to place an object if one wishes to ascertain its colour by looking at it (EPM, §18).

He goes on to conclude,

one has *no* concept pertaining to the observable properties of physical objects in Space and Time unless one has them all—and, indeed, . . . a great deal more besides (EPM, §19).

Sellars thus puts in place a central plank of a coherence theory of concepts: possession of a concept, even an observational one, requires possession of many other concepts. Furthermore, since possession of color concepts presupposes knowledge of “circumstances to place an object if one wishes to ascertain its color by looking at it” and since this point is generalizable, Sellars concludes that all observational knowledge of particular fact presupposes knowledge of general truths. More specifically:

Observational knowledge of any particular fact, e.g. that this is green, presupposes that one knows general facts of the form *X is a reliable symptom of Y*. And to admit this requires an abandonment of the traditional empiricist idea that observational knowledge ‘stands on its own feet’. (EPM, §36)²⁵

The notion of *presupposition* Sellars invokes here lies in—and, indeed, captures—the second “logical dimension.” This notion, it should be stressed, is distinctive to Sellars and must be kept separate from notions familiar from the linguistics literature (e.g., from P. F. Strawson’s criticism of Russell’s theory of definite descriptions). It is because Sellars take propositions to stand in this relation of presupposition that he rejects the idea that experience confers warrant on the observational (and, more broadly, the idea of the given) and is moved to espouse a coherence theory of empirical warrant.

16. Sellars exploits the relation of presupposition in his account of the non-inferential warrant of observational propositions. This account goes, very briefly, as follows. Sellars holds that particular perceptual judgments (e.g., “those birds are blue”) presuppose (PJ).

²⁵SK, lecture I, §7: “Knowledge ‘at the perceptual level’ essentially involves *both* knowledge of singular matters of fact and knowledge of general truths. Neither is possible without the other.”

(PJ) Perceptual judgments are likely to be true.²⁶

And he claims that (PJ) possesses non-inferential warrant, warrant independent of logical relations (PJ) bears to other propositions. Sellars thinks (PJ) possesses such warrant because he thinks (PJ) occupies a critical position in the conceptual system. Unless (PJ) is true, Sellars says, “the concept of effective agency has no application” (MGEC, §83). In “Structure of Knowledge,” he makes a yet stronger claim. He takes (PJ) to be an essential part of a framework and “*we have to be in this framework to be thinking and perceiving beings at all*” (SK, lecture III, §45). So, Sellars thinks, there is a strong reason to accept (PJ), independently of its logical relations to other propositions: (PJ) possesses non-inferential warrant. Consequently, perceptual judgments are reasonable simply in virtue of being *perceptual judgments*. Hence, Sellars thinks, observational propositions, too, possess non-inferential warrant. (See MGEC, parts II-IV, for more details of Sellars’s reasoning here.)

17. In the Sellarsian picture, then, it is not pure coherence that is generating warrant. There is “original warrant” that is entering the conceptual system through propositions such as (PJ), which, because of their special conceptual position, possess non-inferential warrant.²⁷ Sellars sees this non-inferential warrant as attaching to observational propositions also. Thus, Sellars reconstructs within his scheme something like natural foundationalism, with this one crucial difference: the non-inferential warrant of observational propositions is not coming to them from experience.

²⁶MGEC, §§86–87. Sellars formulates the principle in a more comprehensive way: “introspective, perceptual, and memory judgments are likely to be true.” The narrower formulation is more plausible and suffices for our purposes here.

The idea that perceptual judgments depend on (PJ), or something like it, is not peculiar to Sellars. William P. Alston calls the reliability of sense-perception an “epistemic presupposition” of perceptual beliefs (“Epistemic Circularity,” pp. 328–329). According to Elizabeth Asmis (“Epicurean Empiricism”), Epicurus held that we must accept that all perceptions are true, for otherwise no inquiry would be possible.

²⁷Epistemic principles such as (PJ) “can be placed in a naturalistic setting and their authority construed in terms of the nature of concept formation and of the acquisition of relevant linguistic skills” (SK, lecture III, §44).

18. This is not the place for a comprehensive critical assessment of Sellars’s epistemology of perception.²⁸ I do wish to point out, however, that this epistemology is less attractive than natural foundationalism. *First*, Sellars’s explanation of the non-inferential warrant of observational propositions, resting as it does on the claimed presupposition relation to (PJ), is both unintuitive and problematic (see §28 below). *Second*, even if we grant that Sellars succeeds in recovering within his scheme a foundationalist structure that parallels that of natural foundationalism, the structure recovered is unstable. For, if the non-inferential warrant of observational propositions has its source in the warrant of principles such as (PJ), then there is little reason to exclude these principles from the foundationalist base. There is little reason, that is, to accept the first dictum, that the observational is foundational. Sellars strives mightily to preserve this dictum, but little motivation remains for it once one abandons, as Sellars does, the idea that experience confers warrant on the observational (= the second dictum).

19. Even though Sellars fails to provide an epistemology that improves on natural foundationalism, he is right that its second dictum is false. There is, I want to argue, a relation between propositions—I will call it *rational priority*—that undermines the second dictum. This relation is not Sellarsian presupposition—it has a quite different character, as the next part will make plain.

IV. Rational Priority

20. *Rational priority* is a binary relation that holds between propositions, and it is doubly relative: it is liable to vary with the perceptual situation and, if the perceptual situation has several perceivers in it, with the perceiver as well. Let s be a perceptual situation and let p be a perceiver in s . Then, I will use ‘ $R_{s,p}$ ’ to stand for this binary relation, and I will use

$$(1) \quad R_{s,p}(O, Q)$$

²⁸In *CE*, chapter 2, I provide a critical assessment of some central elements in Sellarsian epistemology.

to express “proposition O is rationally prior to proposition Q relative to s and p .” Statement (1) holds iff:

- (i) O is an observational proposition for p in s ,
- (ii) Q is a proposition that is antecedently accepted by p in s , and
- (iii) the rationality of p 's acceptance of O depends on the rationality of p 's acceptance of Q ; if the acceptance of Q is not rational then the acceptance of O , too, is not rational.

The rational basis of O relative to s and p (symbolically, $RatBasis_{s,p}(O)$) is the set of propositions rationally prior to O relative to s and p ; that is,

$$Q \in RatBasis_{s,p}(O) \text{ iff } R_{s,p}(O, Q).$$

Note that “rational priority” and “rational basis” connect propositions across the perceptual transition: they connect an observational proposition O with propositions Q accepted *antecedent* to the acceptance of O . I will assume that there a moment immediately prior to the acceptance of O when the subject accepts the propositions in the rational basis of O .

21. Let us apply the two notions in a simple and artificial perceptual setting. Imagine that three persons—say, Alice, Bob, and Carol—enroll in a psychological experiment in which they will be asked to assess the colors of some numbered blocks that will be visible to them. These blocks will be illuminated by a special light source that can be set to emit either ordinary light or a variety of other lights that greatly distort color perception across the color spectrum. (The light source and its settings will remain invisible to the enrollees throughout the experiment.) The enrollees are all informed about the physical setup. And they are informed that before the blocks are shown to them, each of them will privately be given some information (which they should not share with the others). The illuminated blocks will then be shown to them, and they will be asked to answer questions about the colors of some of the blocks. (They should not reveal their answers to the others.) Imagine that in one run of the experiment, Alice, Bob, and Carol are each

told, respectively, I_A , I_B , and I_C .

- (I_A) The light is normal ($= N$).
- (I_B) Block #2 is green.
- (I_C) If $\neg N$ then $23 \times 37 = 851$.

Let us imagine that Carol, who is told I_C , makes a mistake in her calculation and concludes that the consequent of I_C is false and thus comes to accept N . So, antecedent to their forthcoming observations, Alice and Carol both accept N but Bob does not; furthermore, while Alice's acceptance of N is rational, that of Carol's is not. The blocks are now shown and, let us imagine, the enrollees can see a green block marked with '2' and a blue block marked with '3'. The enrollees are asked the color of block #3 and they all affirm the proposition O_3 :

- (O_3) Block #3 is blue.

(Bob, of course, relies on I_B in his acceptance of O_3 .) Let s be the perceptual situation described, with its three perceivers. Then, we have that, in s , proposition N is in the rational basis of O_3 relative Alice and Carol, but not relative to Bob:

$$N \in \text{RatBasis}_{s, \text{Alice}}(O_3), N \notin \text{RatBasis}_{s, \text{Bob}}(O_3), \text{ and } N \in \text{RatBasis}_{s, \text{Carol}}(O_3).$$

And furthermore,

$$I_B \notin \text{RatBasis}_{s, \text{Alice}}(O_3), I_B \in \text{RatBasis}_{s, \text{Bob}}(O_3), \text{ and } I_B \notin \text{RatBasis}_{s, \text{Carol}}(O_3).$$

Alice's acceptance and Bob's acceptance of O_3 are rational, but not that of Carol's. Carol's acceptance fails to be rational because her antecedent acceptance of N fails to be rational.

22. Observational propositions accepted by a perceiver in one and the same perceptual situation may possess quite different rational bases. In the previous example, Alice may have accepted, in

addition to the incomplete proposition O_3 , the following complete one (§8):

(O_{3*}) At 11:00 a.m. on January 2, 2019, there is a block marked ‘3’ that is blue.

This proposition may also be observational in s for Alice. And if it is, its rational basis may well be significantly wider than that for O_3 , for it may contain the proposition (e.g.) “Today is January 2, 2019,” which does not belong to the rational basis of O_3 . The point can be generalized: typically, complete propositions possess wider rational bases than the corresponding incomplete ones. On the other hand, the rational bases for appearance propositions are narrower. For example, Alice may have accepted the appearance proposition

(O_{3a}) It appears to me as though there is a blue block marked ‘3’.

Now, while N belongs in the rational basis of O_3 , it does not belong in the rational basis of O_{3a} . The rationality of Alice’s acceptance of O_{3a} does not depend on the rationality of her acceptance of N . Indeed, it is not implausible to suggest that O_{3a} is *autonomous*, in the sense that its rational basis is empty.²⁹

So, different observational propositions may possess different rational bases for the same speaker in one and the same situation. One special case is worth noting: a reflexive observational proposition (e.g., of the form “I see that O ”) typically possesses the same rational basis as O .

²⁹More precisely, O is *autonomous relative to* a perceptual situation s *and* perceiver p iff nothing belongs to $RatBasis_{s,p}(O)$. Observe that a proposition that is autonomous in this sense may yet be dependent on various elements in the subject’s view. For example, the acceptance of an appearance proposition may be dependent on an ostensive definition through which the subject acquires a color concept. The subject’s acceptance of the ostensive definition may be irrational (*CE*, §255), and this may render the subject’s acceptance of the appearance proposition irrational.

If Sellarsian presupposition is transitive, then Sellars commits himself to an untenable claim about appearance propositions, namely, that they carry hefty presuppositions. Sellars says that the concept “looking green” presupposes the concept “green.” He claims, furthermore, that the latter concept presupposes “knowing in what circumstances to place an object if one wishes to ascertain its colour by looking at it” (see the first extract from *EPM* in §15 above). It follows that, according to Sellars, appearance propositions presuppose hefty knowledge.

Hence, typically, if O is warranted for a subject then so also is the corresponding reflexive proposition.

23. The rational basis of an observational proposition may contain theoretical propositions. If Alice is a neurophysiologist of color perception and believes that normal color perception requires the neurons in the lateral geniculate nucleus to function in a certain manner ψ then $RatBasis_{s, Alice}(O_3)$ may, under certain circumstances, contain the theoretical proposition “the neurons in my lateral geniculate nucleus are functioning in the manner ψ .” The relation of rational priority depends on the subject’s view, and a view may render a theoretical proposition rationally prior to an observational one. When the view is unusual, the rational basis of an observational proposition O may contain propositions with little apparent connection to O . In the above example, this occur with Carol, for whom we have:

$$R_{s, Carol}(O_3, “23 \times 37 \neq 851”).$$

24. The rational basis of an observational proposition is, nevertheless, highly limited. Antecedent to her acceptance of O_3 , Carol may have accepted many propositions, including those pertaining to geology and astronomy. These propositions do not belong to $RatBasis_{s, Carol}(O_3)$. In general, “rational basis” is a highly selective local relation, not a holistic one.

25. It is important to keep separate the notions of “rational priority” and “derivational priority.” That Q is rationally prior to O tells us little about the relative positions of Q and O in a foundationalist structure. Let us note here the following:

(i) The propositions in the rational basis of a proposition O typically do not imply O . In the previous example, the propositions in $RatBasis_{s, Alice}(O_3)$ are accepted by Alice before her perception of the blocks, and the conjunction of these propositions does not imply O_3 . The truth of O_3 is something Alice learns through her perception; it is not antecedently known to her. So, an observational proposition may fail to be autonomous and yet may add new, synthetic content to a subject’s view of the world.

(ii) That a proposition Q is in the rational basis of O does not imply that Q is in the derivational basis of O . Indeed, Q 's being in the rational basis of O is consistent with the derivational basis of O being empty; that is, it is consistent with O 's being basic in the foundationalist structure. "Being basic" and "being autonomous" are substantially different features of propositions. *A proposition that is basic in the foundational structure need not be autonomous.* I believe the conflation of the two ideas—"being basic" and "being autonomous"—is responsible, at least in part, for the traditional notion that only appearance propositions can populate the foundationalist base. Sellars is right, I think, to reject this aspect of traditional foundationalism and to insist that basic propositions "need not stand on their own feet." We can say about "rational priority" what Sellars said about "presupposition": that it lies along a different dimension than the one in which the foundationalist structure lies. Indeed, there is literal truth here: "rational priority" is a cross-moment relation between propositions whereas "derivational priority" is an intra-moment one.

26. The notion "rational priority" is substantially different from Sellarsian "presupposition." *First*, Sellarsian "presupposition" is an absolute relation. Sellars thinks that all observational propositions presuppose (e.g.) "perceptual judgments are likely to be true" (PJ), irrespective of the perceptual situation and the perceiver. "Rational priority," on the other hand, is doubly relative—relative both to the perceptual situation and the perceiver.³⁰ *Second*, Sellars thinks that the relation of presupposition is induced by the nature of concepts and concept acquisition. (This is why he takes the relation to be absolute.) "Rational priority," in contrast, is induced by *the relativity of perception*, not by the nature of concepts and concept acquisition. According to the relativity of perception, the character of the presentation of the world in experience depends not only on the presented objects and their features but also on such items as the perceptual environment, the situation of the subject, and the state of the subject's sensory apparatus. The character of the presentation of a blue cube, to recall a familiar example, depends on the angle

³⁰A side note: (PJ) is not, in general, rationally prior to observational propositions. A subject may fail to antecedently accept (PJ) and yet her perceptual judgments may be perfectly rational. Alternatively, the subject may have come to accept (PJ) on the basis of fallacious reasoning, but this may well have no effect on the rationality of her perceptual judgments.

from which it viewed, the light illuminating the cube, the state of the subject's eyes, and so on. Correspondingly, the subject's perceptual judgment (e.g., about the color of the cube) depends on the subject's antecedent stance on those of these things about which she has a view (e.g., the light illuminating the cube). It is this dependence of the perceptual judgment on the antecedent view that is reflected in the relation "rational priority."

27. The two perspectives, the Sellarsian and the one I am recommending, lead to interestingly different characterizations of the relation of theory to observation. Both perspectives acknowledge that observation does not "stand on its own feet," and they both allow that theory bears on observation. However, the relation "bearing" is understood differently in the two perspectives. Sellars takes the bearing relation to be conceptual. He takes the meanings of observational terms to implicate the meanings of theoretical terms. Sellars can thus attribute to the adage "observation is theory-laden" non-metaphorical truth. From the perspective I am recommending, all this is too strong. Theoretical propositions can be rationally prior to observational propositions, but the contents of the former are not implicated in the contents of the latter. In the example above (§23), Alice's acceptance of O_3 is theory-dependent, in the sense that the rational acceptance of O_3 is dependent on the rational acceptance of the proposition "the neurons in my lateral geniculate nucleus are functioning in manner ψ " (= T , say). But this implies nothing about the relationship between the contents of O_3 and T . It is perfectly consistent with the idea that the content of O_3 implicates neither the content of T nor that of "lateral geniculate nucleus." So, we can recognize that theory bears on observation and yet accept the commonsense conception that the contents of color judgments of a theoretician such as Alice are no different than those of (e.g.) a child with little knowledge of the neurophysiology of color vision. The child can express genuine disagreement with Alice and can even correct some of her color judgments.

28. I do not think that there is anything in the nature of concepts and concept acquisition that warrants regarding Sellarsian "presupposition" as a substantial, legitimate relation. In particular, I do not think Sellars is right in claiming that grasping a concept such as "green" requires knowing the circumstances in which to view an object to determine its color. In fact, the

dependence goes the other way around. We obtain the knowledge of proper viewing conditions through empirical inquiry—an inquiry that presupposes that one possesses a wide range of concepts, including color concepts. One can possess the concept “green” even though one has limited or little knowledge of this kind. Hence, there is little reason here to accept the Sellarsian thesis that “one has *no* concept pertaining to the observable properties of physical objects in Space and Time unless one has them all—and, indeed . . . a great deal more besides” (quoted in §15 above). Nor is there any reason here to accept the other Sellarsian claim about “presupposition”: that a perceptual judgment presupposes that perceptual judgments are likely to be true (PJ). Since possession of an observational concept does not require that one know the conditions in which to view objects to determine whether they fall under that concept, perceptual judgments issued using the concept may often be false. It is thus a live possibility that (PJ) is false. However, true perceptual judgments remain possible; hence, the Sellarsian presupposition claim cannot be right. “Presupposition” plays a central role in Sellars’s denunciation of the given as mythical. I suspect the denunciation is itself founded on a relation that is mythical.³¹

29. Sellars is, nevertheless, right that the second dictum of natural foundationalism (“experience confers warrant on the observational”) is false. It is false because the dictum entails improper “reverse flows of warrant.” Consider again the situation of Carol in the example above (§21). Carol’s experience presents her with block #3 as well as with its blueness. Furthermore, Carol believes that the light is normal (*N*), and her view of her situation is not relevantly different from that of Alice. The second dictum entails that Carol’s experience renders rational her acceptance of the propositions

- (2) Block #3 is blue (O_3), and
- (3) Block #3 looks blue.

³¹I think Sellars is right that the foundationalist account of concepts and concept acquisition offered in classical empiricism is fundamentally flawed. But I also think that the coherentist account favored by Sellars is also fundamentally flawed. I provide in *CE*, chapter 8, an account of concepts and concept acquisition that lies between the two extremes of empiricist foundationalism and anti-empiricist coherentism.

Given Carol's knowledge of the experimental setup, she is rational in accepting that if block #3 looks to be its actual color then the light is normal:

(4) If (block #3 looks blue iff O_3) then N .

Since (2)–(4) logically imply N , it follows that Carol is rational in accepting N . The second dictum thus implies that warrant is conferred by experience on Carol's perceptual judgment and is then transmitted to her acceptance of N . But this is the reverse of the actual situation. It is the lack of warrant for N that is transmitted to Carol's perceptual judgment. Warrant cannot flow from O_3 to N , for N is rationally prior to O_3 . The second dictum implies improper flows of warrant and is, therefore, unacceptable.³²

30. I take it to be a central principle governing the concept of rationality that if one of the essential steps leading to a judgment is irrational, then the judgment is itself irrational. For example, if one arrives at a conclusion through a piece of reasoning an essential intermediate of which is fallacious, then the affirmation of the final conclusion is also irrational. Similarly, when the acceptance of a proposition in its rational basis is irrational, the acceptance of the observational proposition is also irrational. Experience does not have the power to erase an earlier wrong and render the perceptual judgment rational. The second dictum is mistaken because it attributes to experience a power it does not possess.

31. The above argument brings out why philosophers have been so attracted to Cartesian foundationalism. The argument shows that when an observational proposition lacks autonomy—when it does not “stand on its own feet”—then we cannot take experience to confer warrant on it. Since appearance propositions are (arguably) the only observational propositions that are assured to be autonomous, they are the only legitimate candidates for acquiring warrant from experience. Natural foundationalism thus devolves into Cartesian foundationalism, with its

³²This argument undermines also a weaker version of the second dictum that sees experience as conferring only a certain degree of warrant on observational propositions, a degree short of that required for outright acceptance.

burdensome program of rationally recovering the external world from appearances. It is notable that as we attempt to lighten the burden by putting more weighty observational propositions in the foundationalist base, the more implausible it becomes to see experience as the source of their warrant. The weightier the observational proposition, the weightier its rational basis, and the less tenable the idea that its warrant issues from experience.

32. The above argument does not show, and is not meant to show, that experience is rationally inert. Even in the case of Carol, whose acceptance of O_3 is not rational, experience is playing a vital rational role. We can see this by noting that Carol's acceptance of O_3 is not arbitrary; it is guided by her visual experience. Even though Carol's acceptance is not rational, the *transition* she makes from her view to the acceptance of O_3 is rational, and it is rational in virtue of her experience. (Analogy: one may come to accept a proposition Q through an application of modus ponens, and one's acceptance of Q may be irrational. Nevertheless, one's *transition* from the premisses to the conclusion may well be perfectly rational. The rational role played by experience is analogous to the role played here by modus ponens.)

We should see the rationality of the acceptance of an observational proposition O as a product of two factors:

- (i) the rationality of the elements in the subject's antecedent view v on which O depends,³³ and
- (ii) the rationality of the transition from an acceptance of v to the acceptance of O .

Experience is responsible for (ii), and in conjunction with (i) entails the rationality of the perceptual judgment. In the above example, Alice's and Carol's experiences render rational the transitions they make to their perceptual judgments. Alice's perceptual judgment is rational because her antecedent view is rational in its relevant parts, and Carol's judgment fails to be rational because her antecedent view fails to be rational in some of its relevant parts.

³³The present phrasing makes room for the possibility that an observational proposition depends on elements beyond propositions antecedently accepted by the subject. It may depend also on ostensive definitions, for example.

33. Ordinarily, we take—and are generally right in taking—a subject’s perceptual judgments to be rational. The explanation of this fact is not that perceptual judgments are, by their very nature, likely to be true and thus reasonable. Nor is the explanation that perceptual judgments are illuminated by experience, giving them a halo of rationality—experience has no such power. The explanation is that experience illuminates the path, the transition, to the perceptual judgment. And against the background assumption that the subject’s antecedent view is rational in its relevant parts (which assumption is, indeed, generally correct), the rationality of the perceptual judgment follows.³⁴

Experience, I am suggesting, is an original source of rationality. The rationality it confers attaches to transitions, however, not to judgments. I have called this conception of the rational role of experience *the hypothetical given*.³⁵

V. Two Types of Reasoning

34. Let us return to the two questions that arise for foundationalism (§5): Which propositions are basic? And what is the source of their warrant? If we reject the idea—as I have argued we should—that experience confers warrant on the observational then basic propositions do not receive their warrant from experience. By definition, these propositions do not receive their warrant from derivations, either. Whence, then, do they receive their warrant? Also, so long as we could take experience to be a source of propositional warrant, a natural and strong constraint on basic propositions was at hand—namely, observability. This natural constraint disappears once we abandon the idea that experience is warrant conferring on propositions. We thus need to rethink which propositions are eligible to be basic.

³⁴This conception allows us to treat experience as a presentation of a portion of reality; however, the presentation is not warrant conferring. The presentation does not (e.g.) make the reality presented known to the subject. Knowledge requires suitable applications of concepts in light of the presentation, and such applications are possible only against a view that is rational in its relevant parts.

³⁵I introduced this idea in *Empiricism and Experience*. In *CE*, chapter 4, I provide an extended and improved exposition of it.

35. I propose that we see the warrant of basic propositions as arising from *reasoning*, albeit reasoning of a different kind than that issuing from the foundationalist structure. There are, I suggest, two quite different types of reasoning. I shall call the type of reasoning that issues from the foundationalist structure *derivational*. We can think of this reasoning as consisting of a series of steps in which, at each step, a proposition is affirmed that is either basic or derived by proper and recognized rules of inference from propositions affirmed in previous steps.³⁶ Let us call the proposition affirmed in the last step in a derivational reasoning *the conclusion of the reasoning*. Then, by going through a derivational reasoning, a subject may come to be rationally persuaded of the truth of the conclusion of the reasoning. For example, a subject may affirm a series of propositions linked in the specified way and may come thereby to be rationally persuaded that at least twice every year, a solar eclipse is visible from some place on the globe.

Let me note some features of derivational reasoning: (i) It is purely *conceptual*. It makes no appeal to the things the subject is seeing, touching, and so on as she goes through the derivational reasoning. (ii) Its pattern is *repeatable*. A different subject may mimic our first subject and come thereby to be rationally persuaded of the same conclusion. (iii) It is *efficient* (because, in part, of the previous two points). Derivational reasoning requires only highly limited types of actions by the subject, and it is easily duplicated to enable other subjects to reach the desired conclusion.

36. Rational persuasion does not always take the simple and straight path found in derivational reasoning. There is reasoning of an entirely different kind, which I am going to call *dialectical reasoning*, and it too can be rationally persuasive. I wish to propose that it is this type of reasoning that accounts for the warrant of basic propositions. This reasoning cannot be modeled as a series of affirmations. It may, instead, be thought of as an *exchange* between two thinkers, one a *guide* and the other a *critical follower*.³⁷ The guide (Gita, to give her a name) attempts to

³⁶I am assuming for simplicity that the background logic allows us to dispense with hypothetical argumentation. Let me add that a more liberal notion of derivational reasoning allows the use of conclusions established in earlier reasonings without having to reiterate their derivations.

³⁷The restriction to two thinkers is only an expository convenience. More than two thinkers may participate in an exchange. Also, one and the same person can imaginatively play

rationally persuade the critical follower (Kirtik, to give him a name) of the truth of a proposition, say Q . Let us imagine that Kirtik neither blindly accept what Gita tells him nor turns a skeptical deaf ear to her offerings: Kirtik is open to rational persuasion. We can imagine that their exchange opens with Gita offering Kirtik an argument for Q . Kirtik may find that the argument possesses some force but has questions about the argument, which he puts to Gita. At the next stage of their exchange, Gita offers answers to Kirtik's questions. We can imagine that Kirtik finds some of the answers problematic, and he puts his objections to them before Gita. At the following stage, Gita may produce rebuttals to Kirtik's objections. And this back-and-forth process can iterate through many stages. One possible ending of the exchange is that Kirtik's questions and objections are all satisfactorily answered, and Kirtik recognizes this and thus comes to accept Q . Dialectical reasoning has the structure of exchanges such as this one, and it cannot be modeled as a series of affirmations.

One important feature of dialectical reasoning, as I am conceiving it: it can involve doings and showings. For example, at one stage in their exchange, Gita may have Kirtik come out to the backyard and look at a recently formed crater, and Gita may offer for Kirtik's acceptance the proposition that the crater is more than two feet deep. The doings and showings may be much more complex than in this example. Gita may take Kirtik on a long voyage to a remote desert, she may set up a complex apparatus there, and she may offer for Kirtik's acceptance the proposition that a certain ammeter gives the reading of two amps.

37. Both types of reasoning, derivational and dialectical, effect a change in view. And, when the reasoning is properly conducted, the *change* in view—the *transition* from the old view to the new one—is rational. The two types of reasoning differ greatly, however, in the kinds of rational change they have the power to bring about. Dialectical reasoning is much more powerful than the derivational—specifically in the following three respects:³⁸

First, because it involves doings and showings, dialectical reasoning can bring about an

both roles, the guide and the critical follower.

³⁸Dialectical reasoning subsumes the power of derivational reasoning. For any derivational reasoning with conclusion C , the guide can persuade the follower of C simply by offering the follower, at the very first stage of the dialectic, the underlying derivation.

aporia in an antecedently consistent view. This is not possible with derivational reasoning; here, if an antecedent view is consistent, it remains consistent after supplementation with conclusions of derivational reasonings. With dialectical reasoning, however, the additions can render the view inconsistent. For example, Kirtik may possess a coherent view which includes the belief that all swans are white. He may be shown a black swan, precipitating in him a recognition of inconsistent commitments. For a different example, measurements of the apparent motions of the moon and the planets may make the Copernican scheme compelling in a view that accepts Aristotelian physics, thus creating a deep incoherence. Note that experience plays a vital role in generating aporia in an otherwise consistent view.

Second, dialectical reasoning can show the way out of aporia. This is something well beyond the power of derivations. When an antecedent view is inconsistent, derivations can bring an aporia to light, but they contain no resources to resolve the aporia. Dialectical reasoning, on the other hand, can sometimes show the way out of aporia (see *CE*, §§347–349, for an example).

Third, dialectical reasoning can result in an improvement in the subject's concepts. This, too, is something quite beyond the power of derivations. Derivations bring into play an antecedent stock of concepts and cannot bring about any changes in the given concepts. Dialectical reasoning, on the other hand, can bring to light (e.g.) that some terms do not possess unique denotations. More specifically, it may bring to light that a name is used confusedly to talk about several distinct objects. Dialectical reasoning can thus prompt redefinitions of some of the terms. Note that here, too, experience often plays a vital role in revealing denotational confusion and in prompting redefinitions of terms.

38. Dialectical reasoning brings with it great power. It can radically transform a subject's view, both with respect to its constituent concepts and with respect to its accepted principles. However, the very things that give dialectical reasoning its power (namely, action and observation) render it costly. Dialectical reasoning can make heavy demands on the material resources of the guide and the critical follower. For, as we have seen, dialectical reasoning can involve (e.g.) travel to distant places and setting up of complex instruments—activities that can be a significant drain on material resources. In comparison, the material demands of derivational reasoning are light. A derivation can be communicated to a reasoner with the aid of ink and

papyrus and, even more cheaply, by e-mail.

Furthermore, dialectical reasoning lacks the repeatability of derivational reasoning. A guide in a dialectical reasoning needs to tailor her offerings to the particular individual she is guiding. Whereas one individual may possess clear and well-defined concepts, another may need to be weaned off unclear and confused ones. Also, what the guide can take for granted with one individual may need extended argument with another. Generally, the more skeptically inclined a critical follower the more resource intensive the subsequent dialectic. One individual may be persuaded that the first battle of Panipat took place in 1526 simply by citing a history textbook. Another, more skeptical, might need to be pointed to contemporaneous accounts of the battle. A third, yet more skeptical, might need to be shown actual documents and proofs of their dates.

39. Dialectical reasoning is, in short, inefficient and expensive. There is thus motivation to dispense with it, as far as possible, in favor of derivational reasoning. If we have converged to an acceptance of an absolute proposition Q through a rigorous dialectic that addresses all our questions, doubts, and objections, then Q can serve as a starting point in our future deliberations—at least until new questions, doubts, or objections force a reexamination of our acceptance of Q . Furthermore, if we have come to accept, in a dialectically rigorous way, absolute propositions Q_1, \dots, Q_n and a conclusion R can be derived from these absolute propositions, then we can bypass dialectic altogether when we are trying to rationally persuade a community member of R . We can provide the member with a derivation of R from Q_1, \dots, Q_n .

40. Of the two types of reasoning, then, one type—derivational reasoning—is made possible by the foundationalist structure. Reasoning of this type exploits the foundationalist structure, and its grounds trace ultimately to basic propositions. This type of reasoning is highly efficient. It involves highly limited sorts of actions—actions that do not require (e.g.) cooperation of different individuals. The second type of reasoning—dialectical reasoning—*makes possible* the foundationalist structure. It provides basic propositions, and it accounts for their warrant. This type of reasoning brings into play a wide range of actions, including actions that require cooperation of many individuals (and even of many nations). The ultimate grounds of this type of reasoning trace back to observation. Observation is thus vital to empirical cognition and to the

provision of basic propositions. However, the importance of observation lies not in its power to immediately reveal reality or to cast a halo of rationality on propositions about reality.

Observation possess no such power. The importance lies in the crucial role observation plays in dialectical reasoning.

VI. Dialectical Foundationalism

41. The function of the foundationalist structure that is discernible in our thinking, I am suggesting, is to promote efficiency in reasoning. As a first approximation, we can say that the basic propositions in this structure are those

- (i) we have come to accept through a sufficiently rigorous dialectic,
- (ii) there is shared recognition amongst us that we agree on these propositions, and
- (iii) they are collectively as simple as possible and yet are strong enough to generate the other propositions we have come to accept through a sufficiently rigorous dialectic.

Basic propositions thus provide good starting points in our deliberations and debates. The more we succeed in converging on basic propositions, the richer we make the foundationalist base and the more we are able to dispense with complex and expensive dialectic in favor of simpler and more affordable derivations.

42. Let us note some features of this foundationalist scheme—*dialectical foundationalism*, to give it a name.

(i) There are no restrictions here on the logical forms of basic propositions. These propositions can be atomic (“Aristotle authored *De Anima*”); they can be universal (“all humans are mortal”); and they can possess a complex logical form (“some planets have more than ten

moons”).³⁹ Furthermore, basic propositions may be observational (“a meteor hit Jupiter at noon GMT on 2 January 2019”), and some may be general principles (e.g., Avogadro’s Principle).⁴⁰

Note that, in contrast with some other foundationalist schemes, dialectical foundationalism does not need a sharp or view-independent demarcation of the observational from the non-observational.

(ii) The foundational structure is not rigid; it can evolve over time. For example, the propositions that count as basic can shift as inquiry unfolds. What counts as a basic principle at one stage of inquiry may come to be regarded as derivative at a later stage and, later still, may come to be abandoned as false. Similarly, a claim about a particular that is regarded as a known basic truth at one stage may subsequently be relegated as derivative or even abandoned as false. Our view of the layout of the world evolves as inquiry progresses and, with this evolution, the foundationalist structure can evolve as well. The former sort of evolution can be rational and so also can the latter sort. Indeed, the transition from one foundationalist base to a subsequent one can be rationally forced.

(iii) The foundationalist structure can vary from community to community. The propositions accepted as basic in one community may be regarded as derivative in another and as controversial in yet another. A community may divide into subcommunities, and the

³⁹Perhaps the propositions given in the last two examples are derivable from other propositions that are basic, and so fail to qualify as basic. Still, the point remains that nothing precludes basic propositions from being of the forms “all . . . are - - -” and “some . . . have more than ten - - -.”

⁴⁰Concerning dialectic and the first principles of the sciences, Aristotle says in *Topics* I.2:

It [dialectic] is useful in connection with the first of the starting-points about any individual science. For if we reason from the starting-points appropriate to the science in question, it is impossible to make any statement about these (since these starting-points are the first of them all), and it is by means of what is acceptable about each that it is necessary to discuss them. But this is unique, or at any rate most appropriate, to dialectic: for since its ability to examine applies to the starting-points of all studies, it has a way to proceed. (101a36–b4)

I think Aristotle is right that it is through dialectic that we arrive at first principles. The conception of dialectic I am putting forward is broader in some respects than Aristotle’s, however.

foundational structure may vary from subcommunity to subcommunity. What the subcommunity of chemists regards as basic may, for example, be regarded as derivative by the subcommunity of physicists. We can allow that there can be subsubcommunities within subcommunities, and we can even allow that a subcommunity may consist of just one individual. We can thus allow personal-level foundations (just as we can allow dialectic in which one person plays the role both of the guide and of the critical follower). However, I would want to insist against traditional forms of foundationalism that a personal-level foundational structure is not a *requirement* of empirical rationality. Nothing about empirical reason requires that there be personal-level basic propositions, much less that these consist (as a significant tradition has required that it must) of propositions given in perception.⁴¹

43. The foundationalist structure enhances our epistemic power; it enables us to know things that otherwise would be beyond our grasp. Furthermore, the priority relation that underpins the foundationalist structure can capture the relation of epistemic priority. That is, it can happen that if propositions Q and R are known to be true, then Q is derivationally prior to R iff Q is epistemically prior to R . Nevertheless, the proposed foundationalist scheme cannot be characterized as epistemic—for the following reasons: (i) The basic propositions are not necessarily known, for some of the basic propositions may be false. (ii) The scheme dispenses with the idea of knowledge provided by direct or immediate awareness.⁴² (iii) The scheme

⁴¹Such personal-level versions of foundationalism are plainly implausible; for at the personal level, the base is too sparse to provide a foundation for the superstructure. Philosophers have been so moved by the thought that personal-level foundations *must* be provided that they have invoked possible observations to fill out the foundational base. (Russell, for example, invokes possible sense-data in his account of our knowledge of the external world.) But this strategy is plainly ineffective. An invocation of possible observations will secure *possible* rationality of the superstructure, not its *actual* rationality, which is what is desired. The fact is that empirical reason requires no personal-level foundations, and it is a philosophical error that generates the illusion that it does.

⁴²The notion of “direct” or “immediate” awareness seems to me nothing but mystical. This kind of awareness is supposed to be a cognition that is gained without the aid of concepts and without any interference from intermediaries. However, our physical constitution provides no basis for such an awareness, and our biological needs are all well served without any such capacity. All awareness of reality—at any rate, all such awareness that matters for rational cognition—is mediated by appearances and by concepts. Our claims are rational and justified in

dispenses also with the idea there is a relation of epistemic priority that orders *things*. For example, some philosophers maintain that the internal (i.e., the mental) is epistemically prior to the external. Others counter by reversing the order of priority; they hold that the external (in particular, behavior) is epistemically prior to the internal. The proposed foundationalist scheme has no use for any such claims about epistemic priority.

44. The proposed foundationalist scheme preserves some of the insights of rival conceptions but without taking on their burdens. Thus, it preserves the insight of coherentism that experience is not a source of propositional warrant. But it does not take on the burden of isolating a property of coherence whose possession by a system of beliefs (together possibly with some further contentful mental states) confers warrant. Coherence theories have a long history, but no account of coherence has ever surfaced that discharges this burden. I myself am doubtful of the existence of any property of the sort required by coherence theories.⁴³

The proposed foundationalist scheme preserves the insight of infinitism that the regress of reasons does not end with propositions in the foundationalist base.⁴⁴ For any proposition we accept, including basic ones, the demand for a reason can be appropriate. Basic propositions are not in general autonomous, and one can legitimately raise the question whether they and the propositions in their rational bases are in fact rational to accept. This infinitist insight can be preserved without requiring that warrant (or full warrant) requires an infinite series of available reasons and without taking on the burden of explaining how the mere availability of an infinite series of reasons can be warrant conferring. Let us observe that the demand for a reason for a proposition *Q* can be understood in two ways:

virtue of the way we handle these intermediaries, not in virtue of a supposed direct cognitive contact with reality gained through an extraordinary faculty of knowledge.

⁴³For coherence theories, see (e.g.) Sellars, “More on Givenness and Explanatory Coherence”; Jonathan L. Kvanvig and Wayne D. Riggs, “Can a Coherence Theory Appeal to Appearance States?” and Selim Berker, “Coherentism via Graphs.” Ernest Sosa’s “The Raft and the Pyramid” is a classic discussion of coherentism and foundationalism.

⁴⁴ For infinitism, see (e.g.) Peter D. Klein, “Infinitism is the Solution to the Regress Problem.” Alvin I. Goldman and Matthew McGrath’s *Epistemology* provides a helpful discussion of all three alternatives: foundationalism, coherentism, and infinitism,

- (i) as a demand for a reason that explains the subject's acceptance of Q , where the subject may be either a person or a community, and
- (ii) as a demand for a reason that would enable the one who is asking for a reason ("the challenger") to accept Q .

Neither reading of the demand supports the requirement of an infinite series of reasons. On the first reading, on which we are setting out the subject's reasons for accepting Q , the iteration of the demand for a reason does not confine us to the foundationalist structure at a particular moment. The iteration forces us to provide reasons for cross-moment transitions and for propositions, in the various rational bases, accepted at earlier moments. The iteration of the demand thus pushes one back in finitely many steps to a point in the life of the subject when reason is not in play, to a moment when the subject is *arational*. (For example, the subject may be a very young child, or the subject may be a primitive community in the early stages of its formation.) Now, if all the finitely many iterations of the demand are satisfactorily met even when they are extended back to the arational stage then, plainly, the proposition is unqualifiedly warranted for the subject. So, on the first reading, warrantedness does not require an infinite series of reasons.

Let us turn to the second reading of the demand, on which we are asked to provide a reason that will move the challenger to accept a proposition. Here an intra-moment infinite series of reasons may well be possible. That is, there may be (e.g.) a series of distinct propositions $\langle R_1, \dots, R_n, \dots \rangle$ such that, at the same fixed moment m , we provide a challenger the proposition R_{i+1} in response to a demand for a reason for R_i . Notice, though, that here "a challenger" is an existential with narrow scope and that reasons are relative to views. So, the infinite sequence $\langle R_1, \dots, R_n, \dots \rangle$ is generated through a shifting of views. For the proposition R_{i+1} is a reason for R_i in the sense that by pointing to R_{i+1} we can get the challenger to see that a transition to the acceptance of R_i is rational for her. We do not here need to provide the challenger with a reason to accept R_{i+1} , since it is in virtue of her acceptance of R_{i+1} that she recognizes that the transition to R_i is rational. Similarly, a different challenger who accepts R_{i+2} can be made to rationally transition to R_{i+1} by citing R_{i+2} . And so on. The existence of the infinite sequence does not imply that there is a view relative to which the entire sequence serves

as a reason for the acceptance of R_1 , much less that warrant in general requires such an infinite regress of reasons.⁴⁵

A more general point is worth making: in contrast to traditional foundationalism and its rivals, the motivation for the foundationalist structure proposed here does not come from the skeptical regress of reasons. The point of the structure is not to block the regress or to answer the skeptic. Its point is to promote efficiency in reasoning.

45. On the present proposal, experience plays a vital role in our cognition of the world. It enables enrichment of our view, both with new knowledge and with clearer and better concepts. Nonetheless, on the present proposal, experience does not possess the power to confer warrant on observational propositions—that is, the second dictum of natural foundationalism is denied (§11). The first dictum (“the observational is foundational”) is denied also. Indeed, each of the four component theses (NF1)–(NF4) that make up this dictum is denied as well. On the present proposal, some basic propositions are not observational (\neg NF1). In particular, some theories or principles of sciences qualify as basic (\neg NF2). Hence, the warrant for theories and principles does not depend solely on observational propositions (\neg NF3). There is thus no need for special nondeductive rules of inference that enable the derivation of theories and principles from observational propositions (\neg NF4).

46. Sellars argued (§§13–14) that the observational is foundational on the grounds that a rejection of this idea entails putting empirical knowledge “in a box with rumours and hoaxes.” The argument is fallacious, however. Suppose we deny that the observational is foundational by admitting that some principles are foundational. That is, we allow that good empirical reasoning can make an ineliminable appeal to empirical principles. We do not thereby abandon the idea that empirical knowledge is backed up by perception and good reasoning. Hence, we do not erase the distinction between empirical knowledge and “rumours and hoaxes.”

⁴⁵The demand for reason cannot be met relative to certain skeptical views (e.g., the view that an evil demon is bent on deception). This should be seen as a defect in the views in question, not as casting doubt on the concepts of rationality and warrant.

47. One is no more required to cast empirical argumentation in the form “Observational propositions \therefore Theory” or in the form “Data \therefore Theory” than one is required to cast all mathematical argumentation in the syllogistic form Barbara (or, worse, in the form “Theorem \therefore Axiom”). No empirical argumentation, derivational or dialectical, is barred from all appeal to empirical principles. Is Newton’s argument for universal gravitation imperfect because of its appeal to principles? Must it be recast in the form “Data \therefore Universal gravitation” if we are to assess its validity? Of course not. The illusion that empirical argumentation must be cast in such fictional forms arises from an erroneous conception of experience and, in particular, from the idea that experience is the original source of propositional warrant. This conception creates the illusion that basic propositions must be observational, which in turn gives rise to the false demand that theories and principles must be derivable from observational propositions.

48. I am suggesting, then, that we should reject the idea that observation plays a foundational role in empirical cognition. This rejection is perfectly consistent with a robust empiricism. We can hold on to the empiricist thought that reason provides us with no substantive factual knowledge. And we can insist that as far as gaining factual knowledge is concerned, there are no higher or better paths than those illuminated by experience.⁴⁶

⁴⁶I recognize that the presentation above of dialectical foundationalism and dialectical reasoning is much too brief. I plan to provide a fuller presentation in a subsequent essay. In the meantime, the reader will find a more extended discussion of dialectical reasoning in *CE*, chapters 10 and 11. Chapters 8 and 9 of the book, though not directly about dialectical reasoning, contain material relevant to it.

References

- Alston, William P. "Epistemic Circularity." Reprinted in his *Epistemic Justification: Essays in the Theory of Knowledge*, pp. 319–349. Ithaca: Cornell University Press, 1989. Originally published in 1986.
- Aristotle. *Posterior Analytics*. Translated with a commentary by Jonathan Barnes, second edition. Oxford: Clarendon Press, 1993. Written in the fourth century BCE.
- Aristotle. *Topics: Books I and VIII*. Translated with a commentary by Robin Smith. Oxford: Clarendon Press, 1997. Written in the fourth century BCE.
- Asmis, Elizabeth. "Epicurean Empiricism." In *The Cambridge Companion to Epicureanism*, edited by James Warren, pp. 84–104. Cambridge UK: Cambridge University Press, 2009.
- Audi, Robert. "Contemporary Foundationalism." In *The Theory of Knowledge: Classical and Contemporary Readings*, second edition, edited by Louis P. Pojman, pp. 204–211. Belmont: Wadsworth Publishing Company, 1999.
- Berker, Selim. "Coherentism via Graphs." *Philosophical Issues* 25 (2015), 322–352.
- Brewer, Bill. *Perception and Its Objects*. Oxford: Oxford University Press, 2011.
- Campbell, John. *Reference and Consciousness*. Oxford: Clarendon Press, 2002.
- Firth, Roderick. "Coherence, Certainty, and Epistemic Priority." Reprinted in *Perceptual Knowledge*, edited by Jonathan Dancy, pp. 164–176. Oxford: Oxford University Press, 1988. Originally published in 1964.
- Goldman, Alvin I., and McGrath, Matthew. *Epistemology: A Contemporary Introduction*. Oxford: Oxford University Press, 2015.
- Gupta, Anil. *Empiricism and Experience*. Oxford: Oxford University Press, 2006.
- Gupta, Anil. "Outline of an Account of Experience." *Analytic Philosophy* 59 (2018), 33–74.
- Gupta, Anil. *Conscious Experience: A Logical Inquiry*. Cambridge MA: Harvard University Press, 2019.
- Hill, Christopher S. *Consciousness*. Cambridge: Cambridge University Press, 2009.
- Hill, Christopher S. "The Content of Visual Experience." In his *Meaning, Mind, and Knowledge*, pp. 218–236. Oxford: Oxford University Press, 2014.

- Klein, Peter D. "Infinitism Is the Solution to the Regress Problem." In *Contemporary Debates in Epistemology*, edited by Matthias Steup and Ernest Sosa, pp. 131–140. Malden: Blackwell Publishing, 2005.
- Kvanvig, Jonathan L., and Riggs, Wayne D. "Can a Coherence Theory Appeal to Appearance States?" *Philosophical Studies* 67 (1992), 197–217.
- Pryor, James. "The Skeptic and the Dogmatist." *Noûs* 34 (2000), 517–549.
- Pryor, James. "The Merits of Incoherence." *Analytic Philosophy* 59 (2018), 112–141.
- Russell, Bertrand. *The Problems of Philosophy*. Oxford: Oxford University Press, 1959. Originally published in 1912.
- Russell, Bertrand. "The Relation of Sense-Data to Physics." Reprinted in his *Mysticism and Logic*, pp. 140–173. Garden City: Doubleday Anchor Books, 1957. Originally published in 1914.
- Schellenberg, Susanna. "Perceptual Content Defended." *Noûs* 45 (2011), 714–750.
- Sellars, Wilfrid. "Empiricism and the Philosophy of Mind." Reprinted in his *Science, Perception and Reality*, pp. 127–196. London: Routledge & Kegan Paul, 1963. Originally published in 1956.
- Sellars, Wilfrid. "The Structure of Knowledge." In *Action Knowledge and Reality: Critical Studies in Honor of Wilfrid Sellars*, edited by Hector-Neri Castañeda, pp. 295–347. Indianapolis: Bobbs-Merrill, 1975.
- Sellars, Wilfrid. "Some Reflections on Perceptual Consciousness." Reprinted in *Kant's Transcendental Metaphysics*, edited by Jeffrey F. Sicha, pp. 431–441. Atascadero: Ridgeview, 2002. Originally published in 1978.
- Sellars, Wilfrid. "More on Givenness and Explanatory Coherence." Reprinted in *Perceptual Knowledge*, edited by Jonathan Dancy, pp. 177–191. Oxford: Oxford University Press, 1988. Originally published in 1979.
- Sosa, Ernest. "The Raft and the Pyramid: Coherence versus Foundations in the Theory of Knowledge." Reprinted in his *Knowledge in Perspective: Selected Essays in Epistemology*, pp. 165–191. Cambridge: Cambridge University Press, 1991. Originally published in 1980.