

Where are You Going, Philosophy, and What are Your Methods?

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Abstract: The viability of philosophy as a genuine field of knowledge has been challenged time and again. Some have challenged “traditional” philosophy, or what was considered “traditional philosophy” at a given time; others have challenged philosophy in general. But there has been considerable progress in philosophical methodology in the 20th – and 21st – centuries. In this paper I raise challenges to some of the current misconceptions of analytic philosophy, and I propose constructive methodological solutions.

Key words: viability of philosophy; fundamentalism; Quinean holism; foundational holism; intellect

DOI:10.3969/j.issn.1002-1698.2020.12.018

As philosophy is becoming more and more international, the perennial question “Is genuine philosophical knowledge possible?” regains its urgency. In this paper I discuss a few forms this challenge has taken, focusing on three questions:

- A. Is there anything for philosophy to provide genuine knowledge of?
- B. Do we, humans, have the cognitive resources required for providing such knowledge?
- C. What Methodology should we use in pursuing philosophical knowledge?

I offer a new analysis of the development of views on these questions in Western and in particular Analytic Philosophy, focusing on a few specific cases of progress and regress in achieving genuine philosophical knowledge, and concluding with several positive proposals for improving the prospects of such knowledge.

I. Early Challenges to Philosophical Knowledge

1. Kant. Kant is known for rejecting traditional claims to metaphysical knowledge. In one place he likens Plato’s metaphysics to a “light dove who, cleaving the air in her free flight, and feeling its resistance, imagines that her flight would be still easier in empty space ...” (1781/7:A5/B8 – 9). Traditional metaphysics, according to Kant, lacks “friction”, i. e., adequate standards of truth, evidence,

and justification. Metaphysical knowledge is illusory. Kant calls it “dialectical illusion” (Ibid. :A62/B86), “sophistical illusion” (Ibid. :A64/B88), “home of illusion” (Ibid. :A235/B295), “the illusion of transcendent judgments” (Ibid. :A297/B354), etc.

2. Analytic Philosophy. Analytic philosophy emerged in Britain in the early 20th Century. Its birth was closely connected to the so – called “Linguistic Turn”, associated with Moore, Russell, Wittgenstein, and their followers. Early on, analytic philosophy rejected many aspects of what, at the time, counted as traditional philosophical knowledge, including Kant’s theory. Its main criticisms of traditional philosophy were:

- (a) Traditional Philosophy does not set adequate standards of precision and accuracy for its theories.
- (b) Much of traditional philosophy (in particular, Hegelian and Post – Hegelian philosophy) is nonsense.
- (c) There are no specifically philosophical facts for philosophy to study.

One of the central conclusions early analytic philosophers drew from these criticisms was that philosophy’s main task is to expose philosophical errors and in particular philosophical “nonsense”. Their preferred method was logical – linguistic analysis.

3. The Later Wittgenstein. Wittgenstein (1953/58/63) criticizes the very idea of theoretical philosophy, targeting his own earlier philosophical theory along with others’. Philosophy, according to the later Wittgenstein, is therapeutic rather than theoretical. The right philosophical method is quietism, a method designed to wean us from the temptation to engage in philosophical theorizing in order to arrive at a state of philosophical tranquility. In Wittgenstein’s words:

(Philosophy) may not advance any kind of Theory. (1953 : § 109)

(Philosophy) must do away with all explanation. (Ibid.)

(The goal is to) give. . . philosophy peace, so that it is no longer tormented by questions which bring itself in question. (Ibid. : § 133)

The philosopher’s treatment of a question is like the treatment of an illness. (Ibid. : § 255)

4. The Logical Positivists. The logical positivists — Rudolf Carnap, Moritz Schlick, and other members of the so – called “Vienna Circle” (early 20th – Century) — were scientifically – oriented philosophers and social scientists who claimed that scientific knowledge is the only factual knowledge and all metaphysics is meaningless. The primary role of philosophy is to provide a linguistic framework for empirical science, not to develop its own theories of especially general or distinctly philosophical aspects of reality. Philosophy, thus, is an “external” discipline (Carnap 1950 : 206), charged with providing linguistic tools for science. Philosophers usually think of questions like “Is there an external world?” as factual philosophical questions. But they are not. All philosophy is entitled to do is propose “a certain form of language” for speaking about the objects of empirical science, i. e., propose “rules for forming statements (about physical objects, events, phenomena) and for testing, accepting, or rejecting them” (ibid. : 208). These proposals are measured primarily by pragmatic rather than veridical criteria, i. e., by criteria of “efficiency, fruitfulness, and simplicity” (ibid.), rather than by factual and evidential criteria.

While this sample of early challenges to theoretical philosophy is rather standard, my analyses

of philosophical progress and regress in the next two sections will be largely non – standard.

II . Methodological Progress

Although Quine is not commonly viewed as a champion of philosophical theory, his innovative steps in “Two Dogmas of Empiricism” (1951) do support a revival of a full – fledged theoretical philosophy. This may strike some as a surprising claim in light of Quine’s renown as an advocate of empiricism, pragmatism, and later naturalism, which are all opposed to theoretical philosophy. But a philosopher can make contributions that diverge from, and even conflict with, trends he is commonly associated with. And the major themes of “Two Dogmas” — specifically, rejection of the traditional dichotomies, anti – foundationalism, and “relational” holism — fall under this category. While Quine himself did not make much use of these advancements in his subsequent philosophy, the positions themselves mark significant progress in theoretical philosophy. In describing Quine’s contributions I will emphasize what I take to be their relevant grounds rather than rehearse Quine’s own arguments, which often focus on issues that are largely tangential from our perspective.

1. Rejection of the Traditional Dichotomies. One problematic aspect of theoretical philosophy prior to Quine was its tendency to draw all – or – nothing dichotomies. Three dichotomies of this kind are the analytic – synthetic dichotomy, the apriori – empirical (or apriori – aposteriori) dichotomy, and the necessary – accidental (or necessary – contingent) dichotomy. In one way, these dichotomies make good sense: human knowledge does have both a factual (synthetic) component and a conceptual/pragmatic/conventional (analytic) component, it is obtained by using both sensory perception and intellect, and it does convey both accidental/contingent information about the world and necessary information about it. When thus understood, the traditional dichotomies alert us to the richness of elements that go into human knowledge: factual and conceptual/pragmatic, sensory and intellectual, contingent and necessary.

This, however, leaves it an open question how these different components can combine, and in particular (i) whether knowledge, in a given field, can have both factual and conceptual elements, involve both sensory perception and intellect, convey both contingent and necessary information, and (ii) whether each, or even any, field of human knowledge is either purely analytic or purely synthetic, purely empirical or purely apriori, purely contingent or purely necessary.

The diversity of elements of human knowledge is compatible with a variety of answers to these questions, including positive answers to the first question and negative answers to the second. But the traditional dichotomies, being dichotomous, rule out, or at least discourage, an open – minded approach to these questions. They rule out the possibility that all knowledge has both factual (synthetic) and conceptual/pragmatic/conventional (analytic) elements, all knowledge can, and most knowledge does, employ both sensory and intellectual cognitive resources, all or most knowledge holds in some counterfactual circumstances, and some knowledge holds under a narrower array, some under a broader array, of counterfactual circumstances. In short, the traditional dichotomies rule out the possibility that “the line of knowledge” is a continuum along several dimensions and, in particular, the possibility that no genuine knowledge lies at the extreme ends of this continuum.

How do the traditional dichotomies rule out these possibilities? First, being dichotomous, they draw a sharp division between the two constituents of each duality: the analytic and the synthetic, the apriori and the empirical, the necessary and the contingent. This rules out a continuum. Second, the traditional dichotomies divide the line of knowledge into two parts right at (one of) its end points. Only purely conceptual/pragmatic/conventional knowledge is analytic, only purely intellectual knowledge is apriori, only knowledge that holds under all actual and counterfactual circumstances is necessary. If a field of knowledge has even a minute factual element, it is fully synthetic, if it has a minute perceptual element, it is fully empirical. And if it holds in all but the most extreme counterfactual circumstances, or if it has a minute element that does not hold in all counterfactual circumstance, it is fully contingent. Furthermore, the usefulness of the dichotomies depends on the assumption that the end points are not empty, but this assumption has never been subjected to adequate critical examination. In short, the traditional dichotomies impose an “all – or – nothing” conception of human knowledge, leaving no room for more nuanced conceptions, let alone a conception according to which a mixture of the two elements of each duality is required for, characteristic of, or at least open to, all major branches of human knowledge.

These features of the traditional dichotomies pose significant obstacles for theoretical philosophy and, in particular, for theoretical epistemology and metaphysics, the philosophies of logic, mathematics, and science, and the philosophy of philosophy. Take logic as an example. For adherents of the traditional dichotomies, it is a given that logic is analytic, apriori, and necessary. Focusing on analyticity, its adherents take it as given that logic is utterly non – factual. Since this is taken as given, it leaves no room for an open – minded investigation of foundational issues concerning logic. For example, adherents of analyticity never ask how logic works in the world if it disregards all facts about it, including necessary formal facts. Suppose we want to design an airplane. Clearly, we need to use a (relevantly) correct aero – dynamic theory. But we also need to use a correct logic in designing the airplane. Suppose T is a true aero – dynamic theory and consider using conflicting logical “games” for drawing inferences from T. It is clear that for some logical games, L1 and L2, drawing inferences from T using L1 will result in a well – functioning airplane, but drawing inferences using L2 will result in a malfunctioning airplane. Does this say nothing about the adequacy of L1 and L2? Can we decide in advance, prior to any substantial investigation, that no facts about the world, of any kind, make any difference between correct and incorrect logics? This is an open question that requires a truly open – minded investigation.

By rejecting the traditional dichotomies, Quine opens the way to an open – minded theoretical investigation of this and other philosophical questions.

2. Rejection of Foundationalism. One of the classical jobs of philosophy is to provide a foundation for knowledge, logic, science, morality, etc. In principle, there could be several methods for providing such foundations, but traditionally, philosophers recognized only one method, the so – called foundationalist method. There are two problems with the traditional approach: First, it is blind to the possibility of alternative foundational methods. Second, the foundationalist method itself is severely flawed. In fact, it is self – defeating. The foundationalist method imposes self – defeating conditions on the ordering of the foundation relation x – founds – y (y – is – grounded – in – x ,

y – is – based – on – x , y – is – reducible – to – x , etc). The foundation relation is a strict ($<$ rather than \leq) partial ordering, with minimal elements (one or more) which make up the base of the ordering, and a finite distance (finite number of steps) between each element and the base. Metaphorically, the foundationalist foundation has the structure of a tree (or a pyramid). Foundationalism establishes all knowledge on “basic” or “fundamental” elements, ones that cannot be further founded (grounded) and are considered rock bottom.

The problem is that on the one hand, the most crucial elements in the founding of X are the fundamental elements, those lying the bottom of the foundationalist hierarchy. Therefore, if the basic elements are unfounded, the whole system is unfounded. (An error at the base can undermine the whole system.) But on the other hand, the only way to found a given element, according to the foundationalist method, is to found it on something more basic than it. However, nothing is (can be) more basic than the fundamental elements. Therefore, it is in principle impossible to found any element of X . The foundationalist method is self – defeating.

Quine’s rejection of the foundationalist method opens the way to alternative methods of philosophical foundations.

3. Quinean Holism. Quine’s alternative to foundationalism is holism, or more precisely, his own version of holism. Quine in fact advocates two distinct types of holism, only one of which falls under the present conception of methodological progress. The first type may be called “all – or – nothing holism”, following Dummett, “total holism”. All – or – nothing holism is the view that the smallest (epistemically significant) unit of knowledge is our system of knowledge as a whole.^[1] It says (implies) that we can only significantly master, learn, understand, evaluate, criticize, ground, found, . . . , our system of knowledge in its entirety (or not at all). Quine formulates this principle with respect to empirical knowledge: “the unit (hence also the smallest unit) of empirical significance is the whole of science” (1951:42, my italics). But since, as an empiricist, he identifies empirical knowledge with genuine knowledge as a whole, what he says can be interpreted as applying to knowledge as a whole. Dummett (1973) objects to this type of holism on the ground that it ignores the inner structure of our system of knowledge.^[2] I agree. A significant foundation for knowledge has to relate units of knowledge to each other, hence requires a multiplicity of differentiated units. All – or – nothing holism is incapable of dividing knowledge into units, hence tracking relations between them. This by itself is an obstacle to progress.

Quine’s second type of holism may be called “relational holism”, “structural holism”, “holism of interconnectedness”, “network or web holism”, “Neurath boat” or “back – and – forth” holism (see below), and so on. The important characteristic of this holism, from the present perspective, is its emphasis on an open – ended array of significant connections between different elements of our system of knowledge. Any element of knowledge can, in principle, be connected to any other element, and it is an open question which elements are significantly interconnected and how. This is the view I refer to as “Quinean holism” in the present paper. It is important to distinguish it from another construal of Quine’s holism, according to which it says that all elements of knowledge are in fact connected to each other, all are equally connected, and none are more significantly connected than others. The latter kind of holism, which was rightly criticized by Friedman

(2001), is not the one I refer to as “Quinean holism”. Quinean holism, in the sense meant here, is selective. But it is also open – ended. The question “What connections between what units of knowledge are epistemically – significant?” is an open question.

Quinean holism is an alternative to foundationalism. But what kind of alternative is it? In particular, is it a foundational or an anti – foundational alternative to foundationalism? Does it reject the foundational enterprise as such or does it offer a new foundational methodology, different from foundationalism? It may not be clear what Quine’s answer to this question is. But our question is not about Quine. Our question is: “Does Quinean holism, standing on its own, point to, or offer the seeds for, a new foundational methodology?”. My answer to this question is: “Yes, Quinean holism offers a new, if partial, foundational methodology,^[3] one that avoids the pitfalls of the foundationalism”.

In what way is Quinean holism a foundational alternative to foundationalism? Quinean holism suggests a new understanding of what counts as a foundation, what a foundation has to accomplish, and how a foundation is established. In so doing it liberates us from the untenable vision of a foundation as a once – and – for – all, absolute, and absolutely certain justification, replacing it with the more realistic vision of a foundation as critical – examination and incremental justification, and allows the foundational relation to assume a broad and open – ended array of patterns. Justification (grounding, founding) relations between units of knowledge can take multiple forms, some simpler and more direct, others more complex and roundabout. These include linear and tree – like patterns of the kind sanctioned by the foundationalist methodology, but they also include other patterns, including back – and – forth patterns which may involve a certain measure of circularity.

Back – and – forth patterns are associated with the Neurath boat metaphor, which originated with Neurath and was adopted by Quine. The pursuer of knowledge, according to this metaphor, is a mariner at sea, and our system of knowledge is a boat she serves on. The pursuit of knowledge is compared to fixing holes in the boat, and a typical way of proceeding is moving “back – and – forth”. Finding a hole in the boat, the mariner steps to a different place on the boat, uses whatever resources she finds on the boat to build a makeshift cover for the hole, then moves back to the covered hole, finds, or builds, new, better resources for fixing the hole, moves away, re – fixes the hole, and steps back, continuing her journey. This method of proceeding has an element of circularity, but this circularity is neither trivializing nor destructive. The main point is that at each point the mariner uses (creates, introduces) new elements for continuing her pursuit of knowledge, and the burden of progress falls largely on the new elements.

I call this type of circularity “constructive circularity”. To construct a foundation for X we may use some element(s) of X, together with other elements outside X. Here is an example. Suppose we set out to critically examine and, depending on the results, either justify or issue a negative evaluation of a logical system X. Suppose, furthermore, that X contains the law of non – contradiction. In that case we may use the law of non – contradiction to set a constraint on our justification (or negative evaluation) of X; namely, the justification of X should be non – contradictory. Here, some element of X plays a role in the justification of X, but this element, by itself, does not suffice to justify X. We need other elements, Y, Z, . . . (possibly, philosophical rather than logical el-

ements), to justify X in a non – contradictory manner. The use of these elements ensures that while the justification of X has a certain circular aspect, it is not trivialized by this aspect. Indeed, it is possible that Y, Z, . . . will lead to a negative evaluation of the logical system X, including its law of non – contradiction, so we will replace it by another logic, lacking this law. In that case, we will revisit our demand that the evaluation (justification) of the new logic satisfy non – contradiction, (possibly) setting other requirements in its place.

Although in some ways, a holistic foundation is more flexible than a foundationalist foundation, in other ways it is more demanding. In the case of knowledge, for example, it requires that all units of knowledge be subject to critical examination and justification. No units are exempt from this requirement, including units that foundationalists place at the bottom of their hierarchy. This is crucial for avoiding the foundationalist spectacle of units of knowledge that carry the heaviest foundational burden, such as logic, being exempt from a critical foundation themselves.

III. Regress

1. Radical Naturalism. In the 1960's Quine developed an empiricist methodology called "naturalism" or "naturalized epistemology" (1969). Naturalism has become a large and powerful philosophical movement with both moderate and radical proponents. Some of naturalism's moderate tenets further contribute to theoretical philosophy: (a) Philosophers are free to incorporate scientific knowledge in their theories, (b) Philosophy is not superior to science (philosophy is not "first philosophy"), etc. But other, more radical tenets limit progress in theoretical philosophy. In particular, the tenet that the only method for producing genuine knowledge is the scientific (i. e., empirical) method marks a significant regress from the open – minded approach associated with Quine's earlier holism and liberty from the traditional dichotomies. Quine continues to embrace holism and reject the traditional dichotomies, but his naturalism blocks some of the most important elements of progress in his earlier work. Whereas Quine's earlier holism opens the door to a variety of methods for producing knowledge, including methods that involve significant use of non – sensory resources as instruments of both discovery and justification (used alongside sensory perception), Quinean naturalism shuts this door.

Most disturbingly, Quine overlooks intellect altogether. He recognizes two possibilities: either knowledge is based on sensory perception or it is based on supernatural resources such as palm or leave reading. But intellect does not fall under either of these categories. Another resource recognized by Quine is pragmatic considerations, but as an instrument of factual knowledge, intellect does not fall under this category either. Indeed, Quine does not consider the possibility, opened by his earlier philosophy, that intellect and sensory perception work in tandem, jointly producing human knowledge. Intellect as a possible source of knowledge is never mentioned by Quine, not even in discussions of mathematical knowledge. Mathematical knowledge is measured only by its usefulness (indispensability) to empirical science. The idea that mathematics might track certain formal features of the world is never considered.

2. Return of the Dichotomies. Philosophers often connect Quine's radical naturalism to his rejection of the traditional dichotomies. Re – embracing these dichotomies is then viewed as a counter – act to radical naturalism (see, e. g., Bealer 1996). But from the fact that Quine holds both

views it does not follow that the two are significantly connected. In some sense naturalism brings back the old dichotomies. For example, it brings back a version of the analytic – synthetic dichotomy: “stimulus – analytic” (Quine 1960:55) vs. stimulus – synthetic sentences.^[4]

Furthermore, philosophers who object to Quinean naturalism usually object to its narrow conception of human knowledge. But since, as we have seen in Section II above, the traditional dichotomies themselves lead to a narrow – minded view of human knowledge, re – adopting these dichotomies does not lead to the broad, open – minded view these philosophers aspire to. Compared with the progress achieved by Quine’s original rejection of the traditional dichotomies, re – adopting these dichotomies is an act of regress. Doors that were opened by the early Quine are now closed.

3. The No – Foundation Approach. The view that foundationalism is an unviable methodology is widely accepted. But many philosophers view foundationalism’s fall as the fall of the foundational enterprise itself. This view has led many contemporary epistemologists to renounce the foundational goal of philosophy. There are some intermediate positions limited to empirical knowledge, such as reliabilism (Goldman 1979) and virtue epistemology (Sosa 1991). And there is Haack’s (1993) semi – foundational methodology (“foundherentism”). But the idea of a full – fledged theoretical foundation for knowledge, one that grounds all branches of knowledge in the world, is rarely pursued.^[5]

4. Rejection of Natural Necessity and Natural Laws. In the third quarter of the 20th – century, humeanism and other forms of radical empiricism increased their prominence in analytic philosophy of science. What was at issue is the reality of abstract and other non – observable features (elements, constituents, phenomena, events) of (in) nature, and in particular, natural necessity and laws of nature. The underlying outlook has been: “all there is to the world is a vast mosaic of local matters of particular fact, just one little thing and then another” (Lewis 1986:ix); and “to be an empiricist is to withhold belief in anything that goes beyond the actual, observable phenomena, and to recognize no objective modality in nature” (van Fraassen 1980:202 – 3). Now, there is a sense in which this stance toward natural necessity and laws is a mark of open – mindedness. Clearly, we should not take it for granted that nature is governed (or accurately described) by necessary laws. But the view in question curtails not just unwarranted assumptions concerning necessary laws but also an open – ended philosophical investigation of the reality of such laws. Natural necessity is viewed as essentially mysterious – indeed, supernatural. And necessity itself is viewed as an all – or – nothing thing: either laws of nature are absolutely necessary or everything in nature is altogether accidental.

IV. New Progress

1. Re – Rejecting the Traditional Dichotomies. A natural solution to the dual problem of the traditional dichotomies and Quine’s naturalism is re – rejecting the dichotomies without adopting naturalism. Since there is no close connection between the two, such a move is available to us. We have already noted a dual advantage of rejecting the dichotomies: opening up the possibilities that (i) all human knowledge is both factual and conceptual, and (ii) no human knowledge is purely apriori or purely empirical (based on sensory perception).

The first possibility is especially important with respect to logic. One unreasonable result of

the traditional dichotomies is the assumption that logical knowledge is altogether non – factual and that therefore there is no room for worry about factual error or falsehood in logic. Logic is immune to error. We need not take any steps to detect, prevent, or correct errors in logic. This complacency, however, is unwarranted, as the example of competing logics used in designing an airplane (Section II) demonstrates. By re – rejecting the traditional dichotomies we avoid this and other unreasonable results of these dichotomies.

By re – rejecting the dichotomies without adopting the naturalist principle that sensory perception is the only source of knowledge available to humans, we open ourselves to other possibilities. For example, we open ourselves to the possibility that (i) the world itself has features (e. g. , formal features) that are not accessible (or are only scantily accessible) to sensory perception, that (ii) we, humans, have cognitive resources (e. g. , intellect (further discussed below)) that enable us to study such features, and that (iii) some disciplines (e. g. , mathematics) are in fact engaged in studying these features.

2. Foundational Holism. Foundational holism is an alternative to the no – foundation approach discussed in Section III above. Introduced by Sher (2016), foundational holism has two interconnected parts: Part (a) deals with relations between units of knowledge, Part (b) deals with relations between units of knowledge and the world. Part (a) is essentially the Quinean holism of Section II above; Part (b) is non – Quinean. Foundational holism thus incorporates Quinean holism and goes beyond it. Why does it go beyond Quinean holism?

Quinean holism is limited by Quine’s empiricism. Quine’s conception of knowledge was always empiricist. This is reflected in the title of his 1951 paper, “Two Dogmas of Empiricism”⁽⁶⁾ (rather than “Two Dogmas of Epistemology”, as I would have called it). It is particularly central to Quine’s understanding of the relation between units of knowledge and the world. Quine’s model of this relation is a “center – periphery” model. The periphery, in that model, represents the interface of our system of knowledge with the world. The center represents elements outside this interface (primarily, pragmatic considerations).⁽⁷⁾ The empiricist character of Quinean holism is reflected in the fact that the periphery is limited to sensory experience.

This narrow conception of our cognitive access to the world has significant ramifications: (a) As far as the possibility of human knowledge is concerned, the world has only features that are open to sensory perception. (b) There is only one cognitive route from mind to the world: the sensory route. If we call our non – sensory cognitive faculties “intellect”, then intellect cannot make any contact with the world. Intellect can connect units of knowledge to other units. But nothing other than sensory organs can provide, or partake in providing, access to the world.

Foundational holism regards both (a) and (b) as uncritical dogmas that stand in the way of an open – minded approach to knowledge. It is an open question, according to foundational holism, what type of features the world has, what features are cognitively accessible to humans, and which of our cognitive faculties, in which combinations, can reach which features. There are in principle multiple cognitive routes from the human mind to the world: sensory, intellectual, and mixed. Furthermore, our cognitive access to the world exhibits multiple patterns: simple and complex, direct and indirect, linear and non – linear, tree – like and non – tree – like.

It is important to emphasize that this is not a return to traditional rationalism. On the contrary. Foundational holism rejects the view that intellect is the only source of knowledge as much as it rejects the view that sensory perception is. Indeed, by joining Quine in rejecting the traditional dichotomies, foundational holism is not committed to the view that any knowledge is based exclusively on intellect. Foundational holism affirms the reality of a rich, open – ended network of cognitive routes, both routes of discovery and routes of justification (foundation).

3. Giving Intellect a New Life. The role of intellect in naturalistic conceptions of knowledge is very limited. Intellect plays largely an auxiliary, pragmatic role. But given the enormous gap in knowledge — specifically theoretical knowledge — between humans and other animals with sense organs, including ones whose sense organs are (at least) as powerful as ours, it is unreasonable to presume that our theoretical knowledge is primarily due to our sensory organs. Something else — something that goes beyond pure sensory perception on the one hand and pragmatic considerations on the other — is likely to play a central role. Something like intellect. Since this holds for all theoretical knowledge, including empirical knowledge, intellect is likely to play a major role in all (or most) fields of knowledge.

Today, however, philosophers rarely talk about the role of intellect in empirical science. Intellect is viewed as a narrow and highly – specialized faculty — for example, a faculty of rational intuition — limited to mathematical knowledge. To understand intellect’s role in all fields of knowledge — both its role in discovery and its role in factual justification — we need to look for new, broader paradigms of intellect. One paradigm that I find especially promising is that of figuring out (in the everyday meaning of this term). The experimental physicist has to figure out which experiment could test a given empirical hypothesis, then figure out how to design such an experiment, then figure out what the experiment results show, and so on. And figuring out is central to mathematics and logic as well. To arrive at his first incompleteness theorem — a factual theorem — Gödel had to figure out, first, whether arithmetic is complete (something that was probably a more protracted process than instantaneous intuition). And then he had to figure out how to prove that arithmetic was incomplete (something that involved, among other things, figuring out that syntax could represent syntax). Searching for new paradigms of intellect, ones that are free of traditional constraints such as apriority, is a direction philosophy should take.

4. Demystifying Necessity. Necessity, in particular factual necessity — necessity in the world — requires re – thinking. Rethinking from a new perspective, one that goes beyond the traditional perspectives. These focus on apriority and metaphysics, both of which are distrusted by Humans. Such a new perspective is offered by invariance, a notion that has proven highly fruitful both in science and in logic and mathematics. Consider property invariance. The property of being a Euclidean triangle is invariant under all 1 – 1 replacements of points in space that preserve ratios of distance (Klein 1872); a logical property, such as identity or non – emptiness (the existential – quantifier property), ^[8] is invariant under all 1 – 1 and onto replacements of individuals in any domain (Lindström 1966), and so on.

The idea of property invariance can be generalized from logical and geometric properties to all properties, including natural properties, such as is – subject – to – gravity (understood as being

subject to gravity of some magnitude, one or another). The basic idea is that properties in general are selective. They “notice” some differences between objects and not other. For example, the property is – human distinguishes between humans and lions, but not between men and women. We may say that is – human is invariant under replacements, including 1 – 1 and onto replacements, of men by women but not of men by lions.

A few theses connecting invariance to necessity (Sher 2019) are: (a) Every property is invariant under some 1 – 1 and onto replacements of individuals; (b) Some properties are invariant under more 1 – 1 and onto replacements of individuals than others; (c) The higher the degree of invariance of a given property, the higher the degree of necessity of the principles governing it. It follows from these theses that (i) there are different degrees of necessity, (b) if P is a natural property of a high degree of invariance, then the principles governing it have a strong degree of necessity, and as such are candidates for natural laws.

Take, once again, the property is – subject – to – gravity. This property has a higher degree of invariance than is – a – human, is – red, is – a – mountain, is – a – galaxy, is – a – boson – particle, and so on. This is reflected in the fact that it is invariant under more 1 – 1 and onto replacements of individuals than these other properties. But to gauge the invariances of a given property we have to take into account not just actual individuals but also counterfactual individuals. (We will not be able to detect the difference in selectivity or invariance between has – a – heart and has – a – kidney if we only pay attention to actual individuals.) So, the relevant fact is that is – subject – to – gravity is invariant under more 1 – 1 replacements of actual – (and –) counterfactual individuals than most other natural properties. This, in turn, means that the actual – counterfactual scope of the principles governing/describing is – subject – to – gravity is greater than that of the principles governing/ describing most other natural properties. Indeed, is – subject – to – gravity has a very high degree of invariance: it is invariant under all 1 – 1 and onto replacements of actual – counterfactual physical individuals. Therefore, the principles of gravity have a very strong modal force. Not as strong as that of logical principles (since logical properties have a still higher degree of invariance), but stronger than that of geological or biological or psychological or sociological principles, as well as many physical principles. As such, the principles of gravity are admissible candidates for laws of nature.

There is nothing mysterious or supernatural about necessary laws of gravity. The source of their necessity is a mundane feature — high degree of invariance — of the property of gravity. This is not “undisciplined” metaphysics. It is theoretical philosophy grounded in a formal theory (invariance theory), physical knowledge (of the property of gravity), figuring out (intellect), and common sense.

5. Philosophy and Human Values. Analytic philosophers prefer, for the most part, to deal with small and well – demarcated problems rather than with broad philosophical questions. This is especially true in the field of truth, where many philosophers — especially deflationists — emphasize the technical rather than humanistic importance of truth. Most commonly, the focus is on the linguistic aspect of truth and its technical uses, such as facilitating the statement of generalizations (“Everything Tarski said is true”). But recent developments, such as the looming danger of a

“post truth” world, put truth, along with other targets of philosophical inquiry, in a different perspective. What is at stake is not losing a useful technical device, but losing a human value. Putting the human values of truth, knowledge, morality, etc. at the center of philosophy, is finally, the direction philosophy should take.

Notes:

[1] “System of knowledge” is used here as a common, everyday term, rather than as a philosophical term of art. Readers may replace it by “body of knowledge”, “collection of items or units of human knowledge”, “collection of branches or fields of knowledge”, or some similar expression that describes what they identify as the target of a “foundation of knowledge”.

[2] Dummett speaks about the linguistic analog of all – or – nothing holism (“total holism” in his terminology). But what he says applies to the epistemic version as well.

[3] I will explain why it is a “partial” foundational alternative to foundationalism in Section IV below.

[4] A sentence is stimulus – analytic if no external stimulus will lead us to renounce or endorse it (i. e., reject it if we endorsed it, endorse it if we rejected it). Otherwise, it is stimulus – synthetic.

[5] There is, in contrast, a growing movement toward metaphysical grounding (see, e. g., Fine 2012), which is a metaphysical counterpart of epistemic foundation. But participants in this movement have so far not addressed the question whether metaphysical grounding is subject to the same problems as those that plagued foundationalist epistemology.

[6] My italics.

[7] The center and periphery represent other things as well, but these are less relevant to us here.

[8] “ $(\exists x)Px$ ” says that the property P is non – empty.

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