

Part I

Nature, Knowledge and Perception

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Schopenhauer on Scientific Knowledge

VOJISLAV BOZICKOVIC

There is a good deal of truth in the way in which Schopenhauer describes the contrast between the genuine philosopher and the academic scholar who regards philosophy as a sort of scientific pursuit.

(Schlick 1981, 41)

Philosophy is for Schopenhauer not a sort of scientific pursuit nor is science a sort of philosophical pursuit, and it is in this context that he propounds his view of scientific knowledge and of knowledge in general. Those few philosophers who have given it proper consideration, notably Gardiner (1967) and Hamlyn (1980, 1999), and more recently Young (2005), have pointed out that Schopenhauer's view presents some serious, seemingly insurmountable, difficulties. In this chapter I try to redress the balance by arguing that Schopenhauer can be credited with a coherent and viable, in some respects indeed very perceptive view of (scientific) knowledge once a couple of misconceptions, which are the source of these difficulties but which are neither required by this view nor are of any use to it, are disposed of. I offer instead some adequate replacements which are to its benefit, much as they are in line with the overall framework and the objectives of his philosophy. This will also enable us to assess this view in the context of the debates that have emerged in the modern-day philosophy of science and epistemology.

1. The Principle of Sufficient Reason and Knowledge

In *The Fourfold Root of the Principle of Sufficient Reason* (henceforth FR), Schopenhauer tackles the principle of the same name in the context of the relation that the knowing subject has to the object of knowledge, making his view of knowledge part of his account of this principle. This principle, which he calls the basis of all science (FR, 4),

has for him four different forms sharing the same root, one of which is of particular interest for his view of scientific knowledge as obtained by the natural sciences. Owing to these interconnections, an examination of his view of scientific knowledge also needs to be an examination of this principle and of Schopenhauer's conception of knowledge in general. This is evidenced by what he has to say about this principle and its root.

Schopenhauer states the principle of sufficient reason as follows: "Nothing is without a ground or reason why it is" (FR, 6). Then he provides the statement of its root:

Our knowing consciousness, . . . , is divisible into subject and object, and contains nothing else. To be object for the subject and to be our representation . . . are the same thing. All our representations are objects of the subject, and all objects of the subject are our representations. Now it is found that all our representations stand to one another in a natural and regular connexion that in form is determinable A PRIORI. By virtue of this connexion nothing existing by itself and independent, and also nothing single and detached, can become an object for us.

(FR, 41–42; italics in the original)

All knowledge thus concerns representations. But no representation can become an object of knowledge if it is not grounded, if it does not have a reason, in other representations.

Schopenhauer then goes on to remark that it is this connection which is expressed by the principle in its universality. This connection takes on different forms according to the difference in the nature of objects, but it is still always left with that which is common to those forms and is expressed in a general and abstract way by the principle. Hence, the relations, forming the basis of the principle, constitute its own root. "Their number can be reduced to *four*, since it agrees with *four classes* into which everything is divided that can for us become an object, thus all our representations" (FR, 42). As will become clear, it is two of these forms that are of special interest for the aims and the scope of the present chapter – that of *becoming* and that of *knowing*, as Schopenhauer calls them.

2. Some Epistemological Distinctions

According to Schopenhauer, not all of our knowledge is conceptual. Our basic knowledge of intuitive or perceptive representations, i.e., of objects presented to us in our sensory perception, does not involve concepts. In order to have this kind of knowledge it is required by the principle of sufficient reason that objects stand in natural and regular connections, although the knower need not know what they are. Our knowledge of these regular connections, which amount to causal, law-like, relations, is also taken to be non-conceptual. When, on the other hand, it comes to conceptual, abstract knowledge, this principle requires that if a judgment (representation) – itself composed of concepts – is to express a piece of knowledge, it must have a sufficient ground or reason, for which it is further required that it be known by the knower (FR, 156). Non-conceptual knowledge is the business of the faculty of understanding, which has the one function of causal inference, while conceptual knowledge is the business of the faculty of reason, which has the one function of forming concepts. Since the perception of the non-linguistic animals is in relevant respects similar to ours, Schopenhauer

believes that they too have understanding though they do not use concepts, i.e., have no faculty of reason (see FR, 71–72; 110–11).

The following claims can be distinguished here:

1. In addition to conceptual knowledge of objects there is also non-conceptual knowledge of them.
2. In order to have non-conceptual knowledge of objects it is required that they stand in causal, law-like, relations which constitute their ground or reason.
3. Knowledge of causal, law-like, relations between objects is non-conceptual.
4. If a judgment is to express a piece of knowledge, it must have a sufficient ground or reason (to be specified below).
5. This ground or reason needs to be known by the knower.

One may think it impossible for us to apprehend causal, law-like, relations between objects short of applying any concepts (see Gardiner 1967, 121–22). If so, (3) is false and so is (2) insofar as it entails (3). One can also question (2) together with (4) and *a fortiori* (5) on a more general level by urging that our having the respective kinds of knowledge is not subject to the conditions respectively imposed on them by Schopenhauer in (2) and (4). Claim (5) may be found to be too severe; and (1) may seem problematic particularly because of its association with

6. The faculty of abstraction, pertaining to reason, which creates concepts by way of analyzing intuitive, i.e., perceptive, representations (e.g., FR, 146–47; see also WWR II, 66).

This doctrine, which Schopenhauer adopts from the British empiricists, is thought to be very dubious. On this issue Hamlyn remarks:

How reason is supposed to abstract from perceptions remains, as with all doctrines of abstraction, unclear. If the abstraction is a cognitive act it must work on what is already known in the perceptual instances; but if something is indeed known in them they must surely presuppose already some concept of the object perceived. How then is that concept obtained? On the other hand, if the abstraction is not a cognitive act of that kind, but the concept comes into being, so to speak mechanically, it remains quite obscure what principles govern the selection of instances in such a way that they give rise to the concept.

(Hamlyn 1980, 23)

(In order to assess Schopenhauer's view of knowledge, all these claims need to be tackled, but since claim (2) is not directly relevant to the topic of the present chapter I shall not deal with it here. See Bozickovic (1996) for a discussion of some of the issues concerning this claim.)

3. Non-Conceptual Knowledge of Objects

Claim (1) raises the issue of whether all our perceptual knowledge of objects is conceptual. Many recent philosophers would side with Schopenhauer in claiming that it is

not. One of them is Evans (1982) who has claimed that the content of perceptual experience is non-conceptual. In a similar vein, Chalmers (1996) has urged that the content of awareness and of experience is generally non-conceptual in that it does not require an agent to possess the concepts that might be involved in characterizing that content. As he notes, it is quite plausible that an animal such as a dog or a mouse might have fine-grained representations of color distinctions in the cognitive system, while having only the simplest system of color concepts (Chalmers 1996, 383). (Schopenhauer would, of course, deny that it possesses any concepts, but the point is the same.) Conceptual content comes into play only when one moves from a perceptual experience to a judgment about the world based on that experience, usually expressible in some verbal form (Evans 1982, 227). Judgments belong with beliefs as more sophisticated cognitive states connected with the notion of reasons (Evans 1982, 124; see also Chalmers 1996, 232).

It is important to note that Schopenhauer's distinction between non-conceptual and conceptual knowledge of objects is logically independent from the dubious doctrine of abstraction which he takes the shift from the former to the latter kind of knowledge to rely on. In spite of this doctrine, it was very perceptive of him to draw the distinction itself. To see its merit, we can think of it in the light of Evans's further suggestion concerning the links between the non-conceptual and the conceptual contents which does not rely on any operation of abstraction and with which the latter can be substituted on Schopenhauer's behalf. For Evans, perceptual experiences with non-conceptual contents are informational states. Yet, such states are not *ipso facto* perceptual experiences, i.e., states of a conscious subject. An informational state should count as an experience only if its non-conceptual content is available as input to a thinking, concept-applying, and reasoning system (Evans 1982, 157–58). In such a system, conceptual capacities first become operative when it makes a judgment of experience whereby a different species of content comes into play. This way, an unmysterious link between the two kinds of content is established without resorting to an operation of abstraction, and the full merit of drawing the distinction between them is recognized. (The existence of this distinction is still denied by John McDowell (1994) on the grounds that it is a requirement of having experiences that we are able to re-identify them under concepts. This requirement, however, seems to be gratuitous.)

By the same token, this applies to the link between *knowledge of* and *knowledge that*. It has been urged that (in the ordinary non-Russellian sense) knowledge of an object generally implies knowledge that something is the case with regard to it which is itself conceptual. Hence, knowledge of an object is something that one could not have unless one was already equipped with concepts to some extent (Hamlyn 1999, 57–58). Both these claims, however, are readily accounted for on Schopenhauer's behalf in terms of Evans's view while fully acknowledging the conceptual/non-conceptual distinction.

This requires that Schopenhauer's theory of concepts be readjusted. Other than dropping his reliance on the doctrine of abstraction, he would have to abandon the Kantian view of concepts as rules for classifying things, which, as pointed out by Young (2005), does not preclude that some of these rules are biological products of evolution also possessed by non-linguistic animals. Schopenhauer's objectives would be more adequately met by tying concept-possession to language as hinted at by Evans, i.e., by claiming that to have the concept of an X is to be able to use properly the word "X" (or

a word of a different language having the same meaning). In this way Schopenhauer could establish that a great deal of our knowledge about the world is non-conceptual. While his examples of this knowledge hover between knowledge we *do not* and knowledge we *cannot* articulate in words, it is the latter that, as Young puts it, makes his discussion of non-linguistic animals the crux of the matter (Young 2005, 44–45).

This view of concept-possession can also accommodate Schopenhauer's claim that, in accordance with (4) and (5) in their application to *concepts* rather than judgments, in terms of which they are stated above, our cognitive grasp of a certain concept (i.e., the meaning of a concept-word) is grounded in our cognitive grasp of other concepts (i.e., the meanings of other concept-words) which is also at odds with the doctrine of abstraction. For, being able to use properly the word "X" requires something like this on any view that rejects the doctrine of semantic atomism – the doctrine that one can grasp the meaning of a word without knowing the meanings of other words. (For a criticism of this doctrine, see Dummett (1981); see also Brandom (1994, 87–89), who takes inferential articulation to be a distinguishing mark of concept-use.)

4. Non-Conceptual Knowledge of Causal Relations

Consider now claim (3) – that knowledge of causal, law-like, relations between objects is non-conceptual. What Schopenhauer has in mind is that the faculty of understanding, which has the one function of causal inference, conceives every change in the phenomenal world as an effect and refers it to its cause quite directly and intuitively without the assistance of reflection, i.e., of abstract knowledge by means of concepts and words (FR, 103). That this is how every change is conceived is part of Schopenhauer's view that the subject's body is both the starting-point of all of his perceptions as well as being for him an object amongst objects liable to the laws of this objective corporeal world (FR, 124). Changes in the phenomenal world are governed by what Schopenhauer calls the law of causality. It is the principle that, "if a new state of one or several real objects appears, another state must have preceded it upon which the new state follows regularly, in other words, as often as the first state exists" (FR, 53). It is "known *a priori* and is therefore transcendental, valid for every possible experience, and consequently without exception" (FR, 20, 63). Since the relation between cause and effect is held to be a necessary one, this law authorizes us to form hypothetical judgments. In this way it shows itself to be a form of the principle of sufficient reason in which all hypothetical judgments must rest and all *necessity* is based. This form of the principle, which is of particular significance for his view of scientific knowledge, Schopenhauer calls the principle of sufficient reason of *becoming* because its application always presupposes a change, "the appearance of a new state and hence a becoming (*ein Werden*)" (FR, 63).

To be sure, for Schopenhauer this law, "the only form under which we are able to conceive changes at all, always concerns merely states of bodies . . ." (FR, 65; also FR, 111). This should also apply to those changes in organic nature whose explanation, Schopenhauer claims, refers us entirely to *final causes*. For, *final causes* need not be thought of as future states (WWR II, 327ff.). As for many philosophers of the past, the motion of bodies plays for him a fundamental role in his explanation of causation. With

them he shares the view that every change is reducible to it and explicable in terms of it. But, unlike them – notably unlike Kant – he, as we saw, considers the subject as an embodied agent whose body is for the subject an object among objects liable to the laws of this objective corporeal world. Yet Schopenhauer shares Kant’s view that this law is imposed on us *a priori*, i.e., that it is unconditionally true. But it cannot be true if there are counter-instances to it as many philosophers have claimed. It has been claimed, for instance, that properties and states make a difference to future states of things or events in things. But, since they do not generate events, they are what philosophers call conditions or determinants rather than causes. This is to say that to talk of causality in terms of “anything that makes a difference,” as Schopenhauer does, is too coarse to distinguish determination in general from causation or causal determination. But, even if this law is true, it does not follow that our experience must conform to it, as Schopenhauer would have us believe. In other words, it is not clear why every change is to be conceived as an effect that we refer to its cause even if it is an effect of a certain cause (let alone if it is not).

Claim (3) – that causal relations between objects presented to us in our sensory perception are non-conceptually apprehended by us – is thus part of the view that the law of causality is known *a priori*. Once this view is exposed, so, it seems, is this claim. For if not every change in the phenomenal world is conceived as an effect that we refer to its cause, it is not obvious that changes so conceived involve non-conceptual knowledge. (But we shall see below that there is a way to sustain this claim.)

5. Causal Regularity and Its Cognitive Status

Claim (4) is the claim that if a judgment is to express a piece of knowledge, it must have a sufficient ground or reason. The ground of the judgment: *Nothing happens without a cause*, which is for Schopenhauer *synthetical a priori*, is the law of causality known to us *a priori*. That is, this judgment “rests not merely on experience but on the conditions of the entire possibility of experience which lie within us” (FR, 160). If, as argued, the law of causality is not valid for every possible experience, then there is no reason either to suppose that this judgment, if true, is true *a priori*. Besides, it is not obvious that it is true. What is true, though, is that the regularity or necessity of causality of which Schopenhauer speaks – if not this principle itself – plays a special, privileged, role in scientific reasoning. Natural science aims to produce a complete theory of the world (in the sense in which it is concerned with it) whose role it is to exhibit all systematic relations between phenomena as consequences of certain fundamental natural laws. Many modern philosophers of science have held the view that these laws are deterministic or at least that deterministic laws occupy a central place in science. This is because the events of the kind mentioned in such a law can also be predicted by it and this can be achieved only on the assumption that there is a causal regularity between the events of the appropriate kind.

It is important to note that the truth of a single deterministic law requires the necessity or regularity of the relation between cause and effect captured by Davidson’s slogan “where there is causality there must be a (deterministic) law.” This claim about necessity is weaker than the claim that nothing happens without a cause in that it does not

entail it, yet it also faces a status problem. For it is doubtful that it can be established empirically since it cannot be proven inductively because the very possibility of induction seems to presuppose its truth and it is also doubtful that it can be established *a priori*.

The problem of the logical justification of induction, which goes back to Hume, has made many philosophers suspicious of induction, and Popper has even denied its existence in any form. We shall see shortly that although for Schopenhauer induction plays a part both in obtaining empirical knowledge as well as in its subsequent confirmations, the kind of induction that he employs is not in need of such a justification and therefore does not require a regularity of causality. But such a regularity is in any case required by Schopenhauer in order to authorize us to form law-like hypothetical judgments. It would be established *a priori* if Schopenhauer and Kant were right in claiming that the law of causality is valid for every possible experience, but we saw that they are not. That it is still a matter of our *a priori* knowledge but in a different, weaker, sense was pointed out by Popper. He argued plausibly in deference to Kant that our inborn expectation of finding a regularity – our “inborn knowledge” – although not valid *a priori*, is still psychologically or genetically *a priori*, i.e., prior to all observational experience, whereby it corresponds very closely to the law of causality. It is also logically *a priori*: it is logically prior to all observational experience; for it is prior to any recognition of similarities, and all observation involves the recognition of similarities or dissimilarities (Popper 1963, 47–48). If so, its application is non-conceptual, as required by (3), even though not every change is conceived as an effect that we refer to its cause. This law of causality takes precedence over scientific laws, yet it cannot make them infallible nor can it provide us with the logical justification of the kind of induction questioned by Hume. But it is more than a heuristic maxim which we can decide to adopt or abandon at will. And this might well be enough to authorize us to form law-like hypothetical judgments – given that for Schopenhauer our inborn expectation of finding regularity would be an expression of the will which itself governs all scientific activity in accordance with our practical needs, as we shall see below.

6. Induction and Scientific Method

Schopenhauer speaks of induction only in passing. In speaking of the origin of the first fundamental truths of astronomy as induction he says that induction is

the summarizing into one correct and directly founded judgement of what is given in many perceptions. From this judgement hypotheses are afterwards formed, and the confirmation of these by experience, as induction approaching completeness gives the proof for that first judgement.

(WWR I, 66)

This does not seem to involve the claim, condemned by Hume, that those instances of which we have had no experience resemble those of which we have had experience. For, induction seems to be taken here only as the process of summarizing previous perceptions (in which Schopenhauer follows Aristotle) as well as adding new ones

whereby it approaches completeness. It is perception of many kinds which confirms the truth of the hypothesis whose discovery is not an inductive step.

Elsewhere, Schopenhauer says that “every piece of empirical knowledge, obtained merely by induction, has always only approximate and hence precarious, never absolute certainty” (FR, 66), i.e., that it is never perfectly certain, but at most attains a high degree of probability (WWR II, 106). The probability of which Schopenhauer speaks is a kind of support the hypothesis gets from “perception of many kinds” which is a matter of its confirmation which, in Hamlyn’s words (1980, 76), presupposes the putting forward of the hypothesis. New evidence, i.e., a large number of the enumerated consequents of the given hypothesis, will, on this view, give it a higher degree of confirmation by widening the scope of this perception: “empirical confirmation of many kinds brings the induction on which the hypothesis rests so near to completeness that in practice it takes the place of certainty” (WWR I, 77). In contrast to induction or epagoge, apagoge – proceeding by way of *modus tollens* – “is always perfectly certain, and through a single, certain example *in contrarium*, achieves more than the induction does through innumerable examples in favour of the proposition laid down. It is so very much easier to refute than to prove, to overthrow than to set up” (WWR II, 106). This is, of course, something that hints at some of the central theses of Popper’s *Logic of Scientific Discovery* concerning the asymmetry between the verifiability and the falsifiability of scientific theories which results from the logical form of universal statements (although for Popper, unlike for Schopenhauer, induction and probability have no role to play here whatsoever).

This seems to suggest that Schopenhauer sees the method of science as hypothetico-deductive (see Hamlyn 1980, 76). While this method is believed to explain scientific (notably physical) theory more adequately than the one proceeding by way of induction by enumeration (as in Bacon), it is found to be short of telling us how hypotheses are arrived at in the first place in that it treats the act of establishing them as a matter of psychology or sociology rather than logic. In contrast, it has been urged that the initial suggestion of a hypothesis is very often a reasonable affair and that “[i]t is not so often affected by intuition, insight, hunches, or other imponderables as biographers and scientists suggest. . . . If establishing an hypothesis through its predictions has logic, so does the conceiving of an hypothesis” (Hanson 1958, 71). However, Schopenhauer’s view does not run counter to this insight. In describing the steps that are necessary for a scientific inquiry, Schopenhauer speaks of the stage in which the inquirer makes a comparison of relevant concepts partly with what is perceived, partly with one another, partly with the remaining store of concepts, so that correct judgments, appropriate to the matter, and fully apprehending and exhausting it, result from them; thus a correct examination or analysis of the matter (WWR II, 120). This suggests that he acknowledges that the putting forward of a hypothesis has a logic to it (which, we saw, is not inductive).

As for the logic of establishing a hypothesis through its predictions, we saw that epagoge and apagoge are for Schopenhauer its critical tools. He says that epagoge or induction is an inference from the consequents to the ground, “and in fact *modo ponente*” (WWR II, 106). This affirmation of the consequents is, of course, not taken to be a deductive (and hence fallacious) move but only a matter of inductive, probabilistic, support in the sense outlined above. Namely, a hypothesis having the form of a univer-

sal generalization will have a large (possibly infinite) number of observational consequences. These are the observational statements (expressing perceptual judgments in the sense of the foregoing discussion) which are entailed by it but do not entail it. In Schopenhauer's view, all they do is make the given hypothesis probable when they are true in which respect this view is similar to Hempel's (1966). Their entailing it would require that their truth be empirically established, which is something that we are incapable of. It could be established only "if we could freely pass through universal space and had telescopic eyes" (WWR II, 67). What we can do, though, is look for counter-examples which would falsify the hypothesis. For, to repeat, a single, certain example *in contrarium*, achieves more than the induction does through innumerable examples in favor of the proposition laid down.

7. Empirical Knowledge and Its Experiential Basis

We have seen that some kind of a regularity or uniformity principle is needed to lend support to empirical, notably deterministic laws, and Schopenhauer believed this to be the law of causality imposed on us *a priori*. In addition, he takes the *law of inertia* and the law of the *permanence of substance* to be two important corollaries that result from the law of causality, "and, because of this, are accredited as knowledge *a priori* and consequently as beyond all doubt and without exception" (FR, 64; also WWR I, 66–67). But, as with the law of causality, there is no reason why the law of inertia should hold without exception. As Poincaré has pointed out, this law is not imposed on us *a priori* since other laws would be just as compatible with the principle of sufficient reason. If a body is not acted upon by a force, instead of supposing that its velocity is unchanged, we may, Poincaré (1905, 91–97) claims, suppose that its position or its acceleration is unchanged. Along similar lines, it could be shown that neither the law of the *permanence of substance* is imposed on us *a priori*.

On the other hand, the law of gravitation is taken by Schopenhauer as empirically known. For we can *imagine* it as ceasing to act at some time, but we could never conceive this as happening without a cause (FR, 129). (Note that Schopenhauer is using the concepts of imaginability and conceivability interchangeably.) All empirical knowledge is for him knowledge of the causes from effects, whereby all natural philosophy rests on hypotheses which are often false, and then gradually give way to others that are more correct (WWR I, 77). To know the cause from the effect means that the knowledge belongs alone to the consequent in so far as the ground, i.e., hypothesis, is given – which is to say that establishing the truth of the observational consequences of a certain hypothesis does not guarantee its truth. For it may turn out to be false; if so, it is being replaced with one that is more correct, which reveals Schopenhauer's belief, shared by many modern-day philosophers, that this is part of the process of the growth of scientific knowledge and of scientific progress.

In accordance with the principle of sufficient reason, all empirical judgments have their ground ultimately in experience, unlike the judgment: *Nothing happens without a cause*, which is for Schopenhauer *synthetical a priori* and whose ground is as we saw the law of causality known to us *a priori*. This is to say that an empirical judgment is either grounded directly in experience or in another judgment which is itself so

grounded, or on the series of judgments, on which this judgment is based, which leads back to one that is so grounded (FR, 157). The truth that such a judgment has is called material truth which amounts to empirical truth when the judgment is founded directly on experience. It is by means of the judgments of this type that scientific hypotheses are linked to experience in the process of their confirmation. In addition, the possibility of empirical verifiability is taken to be the criterion of meaningfulness (WWR II, 71). This criterion, which Schopenhauer shares with (logical) empiricists (as well as with others), is in its own right plausible at least in the sense in which its guiding thought is. This is the thought that a belief or judgment that is not linked to experience is spurious.

A judgment having empirical truth derives from experience thanks to the power of judgment as the mediator between intuition and abstract knowledge (FR, 159–60) which relies on the operation of abstraction dealt with above. But, once again, we can account for this link in terms of Evans's suggestion concerning the links between the non-conceptual and the conceptual contents which does not rely on any operation of abstraction. Nor does Schopenhauer's criterion of meaningfulness need to rely on it even though it is couched in terms of it.

8. Two Related Issues

On the face of it, the view that experience is the foundation of all empirical knowledge creates two problems for Schopenhauer, one having to do with knowledge in general, the other with scientific knowledge.

The former problem concerns the foregoing claim (4), i.e., the principle of sufficient reason of *knowing* – that if a judgment is to express a piece of knowledge, it must have a sufficient ground or reason – as well as claim (5) that this ground or reason needs to be known by the knower. A further, *inferential*, claim is that knowledge of such a ground consists in our ability to come up with an *inferential* epistemic justification of our belief. This applies to all empirical beliefs except for those featuring judgments that are founded directly on experience. Therefore Schopenhauer is not facing a vicious regress problem because the inferential chain terminates in these judgments.

To be sure, on all standard foundationalist accounts, basic beliefs that such experiential judgments give rise to have two features: they are epistemically justified and their justification does not depend on any further empirical beliefs. But it has been argued that this can be true only if one of the following two claims is abandoned: (a) for a belief to be epistemically justified for a particular person requires that this person be himself in cognitive possession of reasons; or (b) the only way to be in cognitive possession of such a reason is to believe *with justification* the premises from which it follows that the belief is likely to be true. (For full details of this argument, see Bonjour 1985, 32–33.) Now, to abandon (b) is to claim that the believer's cognitive grasp of the premises required for the justification of the given belief does not involve further empirical beliefs, which would themselves need to be justified. The given cognitive states are meant to be of a more rudimentary kind which do not themselves require justification, yet can be used to justify other beliefs; hence they are the ultimate source of epistemic justification. So, although the basic beliefs are the most basic beliefs, they are not the most basic

cognitive states. This would, however, conflict with Schopenhauer's *inferential* claim which makes no room for such rudimentary cognitive states. A better option for him would be to replace claim (a), i.e., claim (5), to which it amounts, with a weaker one requiring for a belief to be epistemically justified – and hence to amount to knowledge – that justifying reasons be available in the given situation, but not that the knower *himself* needs to be in cognitive possession of them. For all that (4) asserts is that if a judgment is to express a piece of knowledge, it must have a sufficient ground or reason, which is plausible in its own right. That we do not need (5) is on Schopenhauer's own terms made evident by the fact that he does not hold that having *non-conceptual* knowledge of objects requires that its ground be known by the knower. All that is required here for something to be an object of knowledge is, as we saw, that it stands in natural and regular connections, i.e., that it has a ground, as claimed by (2), whether the knower is able to see what it is or not. Had Schopenhauer applied this to the case of conceptual knowledge, he would have ended up with something like the modern-day externalist view – that what justifies a belief may be facts that are external to the subject's conception of the situation.

Epistemic justification plays an important part in Schopenhauer's philosophy in general. He believes, as we shall see below, that our quest for truth is governed by our practical needs and epistemic justification is instrumental in reaching this goal in that an epistemically justified belief is more likely to be true than one that is not. But this does not require that the believer himself be in possession of justifying reasons, i.e., that (5) be true. Note, though, that abandoning (5) in the present context does not require that it be abandoned in relation to our cognitive grasp of *concepts* in the case of which it is appropriate, as we saw above. As for scientific concepts, this also involves that they can be grasped only in conjunction with other concepts belonging to the same scientific theory, as has been urged by many philosophers of science.

The other problem concerns the pattern of scientific explanation adopted by Schopenhauer. In accordance with the principle of sufficient reason, he takes scientific explanation to be causal, hence deductive in character. There have been many recent philosophers who have also subscribed to this view (including Hempel before his *Philosophy of Natural Science* from 1966). Although this pattern is nowadays considered to be not universally applicable, it is still the case that many explanations in science comply with it and that many philosophers believe that scientists should strive to provide this kind of explanation whenever this is possible. According to it, a description of the empirical phenomenon to be explained is taken to be a logical (deductive) consequence of certain general (deterministic) laws and statements of antecedent conditions (see e.g., Hempel 1965, 249).

This pattern sets up a sharp distinction between theoretical and observational language which in turn places clear demands on an explanation that is deductive. If the explanandum consists of observational statements (judgments), correspondence rules are needed to link the theoretical meaning of the explanans with the observational meaning of the explanandum, formulating which has proved to be a difficult task. This is not the place to deal with this complex issue, but it needs to be mentioned here because the very viability of this pattern depends on how this issue is resolved, which is something that concerns Schopenhauer. (It should be noted in passing that making such a distinction between the meanings of the terms conflicts with the thesis of the

theory-ladenness of observational meaning insisted upon by philosophers such as Hanson and Kuhn.)

9. Scientific and Philosophical Knowledge

The causal relations that are captured by causal deterministic laws in terms of which scientific explanation is conducted are for Schopenhauer no more than universal regularities holding between phenomena, which is not to say that every empirical regularity constitutes a causal law. For behind the scenes these laws are ultimately governed by natural forces as “something on which no explanation can venture” and which do not depend on the principle of sufficient reason which “determines only the appearing, not *that which* appears, only the *How*, not the *What* of the phenomenon” (WWR I, 121). These forces *inter alia* include magnetism, gravity and electricity. For this reason, Schopenhauer insists that such a force is not a cause but only what imparts to every cause the possibility of acting (WWR II, 44; see also FR, 67–69).

Consequently, science cannot go beyond describing these regularities. The *What* of the phenomenon, i.e., the natural forces, are deemed to be incomprehensible because the statements we could use to talk about them could not be empirically verified. This would render them meaningless in the light of Schopenhauer’s criterion of meaningfulness which we looked at above. In claiming this, he comes close to the view, shared by, amongst others, the logical positivists, notably Schlick, and more recently Van Fraassen (1980; 1989), who takes an empirical point of departure and goes on to claim that talk of causes (as something lying behind the phenomena) is metaphysical, as is talk of laws, necessities, and theoretical entities such as electrons.

The *What* of the phenomenon is thus the business of metaphysics for Van Fraassen and for Schopenhauer alike. In contrast, our concepts, which as we saw gain their meaning by being linked to experience, and with them our language as well as the whole of science, are solely concerned with the objects of the empirical world (i.e., with those relations laid down by the principle of sufficient reason) and in accordance with our practical needs (see WWR I, 177). If science is just a means of satisfying our practical needs, then its objective might well (be thought to) be an accurate description of the regularities between phenomena in a way that will enable us to make accurate predictions that will help us attain our practical goals – however simplified this view of the scientific enterprise might seem to be (e.g., to Gardiner 1967, 131ff.). In any case, the idea that science and language constitute the principal function in human activity by means of which humans rule over nature and maintain order in it is something that many philosophers subscribe to. Schopenhauer thinks that this is so because this activity is governed by the will and others have similar views: the intuitionist mathematician Brouwer, for one, thinks that it is a manifestation of the basic will to live.

By claiming that, unlike metaphysics, science is solely concerned with the *How* of the phenomenon, Schopenhauer does not mean to deny that they are interdependent. For one thing, he thinks that science, i.e., physics, needs a metaphysics on which to support itself. For although it is concerned with “the explanation of phenomena in the world,” it is in the nature of physical explanations that they cannot be sufficient since laws of nature by means of which these phenomena are explained themselves rest on

forces of nature which can be explained only in metaphysical terms (WWR II, 172). For another thing, he thinks that metaphysics needs science as a sort of propaedeutics. For, “[n]o one . . . should venture on this without having previously acquired a knowledge of all the branches of natural science which, though only general, is yet thorough, clear and connected. For the problem must come before the solution; but then the investigator must turn his glance inwards” (WWR II, 178–79), i.e., towards the *What* of the phenomenon – towards the forces of nature. As Young (2005, 60) has aptly summed it up, philosophy needs science to tell it, with precision, just what the problem of understanding the whatness of the world amounts to.

Once this is done, i.e., once the investigator has turned his glance inwards, he proceeds – to paraphrase Schlick’s epigram quoted above – as the genuine philosopher and not as the academic scholar who regards philosophy as a sort of scientific pursuit, an account of which is beyond the scope of the present chapter.

10. Concluding Remarks

It has been urged that reliance on the dubious faculty of abstraction, i.e., (6), needs to be dropped if the full merit of the distinction between non-conceptual (intuitive) and conceptual (abstract) knowledge drawn by (1) is to be recognized, an unmysterious link between them established, and the proposed criterion of meaningfulness given credence. This is, we saw, also required by (4) and (5) in their application to *concepts* in the case of which these claims were shown to be plausible. We also saw that (4), in its application to judgments, is plausible while (5) – which is not required even on Schopenhauer’s own terms – needs to be replaced with a weaker claim hinted at above for the reasons given. The truth of claim (3), it was argued, would follow if the law of causality were valid *a priori* which is not so. But we saw that there is a different kind of law of causality that can be claimed to be known *a priori* although in a weaker sense than that insisted upon by Schopenhauer, yet meeting his objectives, one of which is to establish (3). Without affecting the objectives as well as the overall framework and configuration of his philosophy, these amendments have, I believe, enabled us to see his view of (scientific) knowledge as of a piece with certain views advocated in the modern-day philosophy of science and epistemology and to be approached and judged accordingly.

See also 7 The Consistency of Schopenhauer’s Metaphysics; 10 Schopenhauer’s *On the Will in Nature: The Reciprocal Containment of Idealism and Realism*; 15 Schopenhauer and the Objectivity of Art.

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