WHAT IS EMPIRICISM?

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I—Peter Carruthers

Must Empiricists be committed to rejecting all forms of innate knowledge? To answer this question we need an account of what it means to be an Empiricist. The question is worth raising, because the case for Nativism has recently become increasingly powerful.[1] Unless Empiricism can be characterised in such a way as to be consistent with Nativism, it may shortly have to be pronounced dead.

I

The Problem of Unity. We can distinguish two distinct foci of concern which coexist within the Empiricist tradition. Firstly, Empiricists have been opposed to any form of Nativism. They have denied that we have any innate concepts, beliefs or knowledge. They have also denied that we possess any innate mental structures embodying information about particular domains, for example within our faculties of vision or language-comprehension. While allowing that the mind is innately structured into distinct faculties (sensation, imagination, memory etc.), they have insisted at least that all the mechanisms involved in the acquisition of our beliefs should be ones of *learning*, whatever that may ultimately amount to.[2] Secondly, Empiricists have denied that we may obtain substantial knowledge of the world, or of ourselves, *a priori*.[3] They have insisted that all such

[1] While I shall not consider the case for Nativism here, I have done so in the longer work from which the paper is extracted, namely *Human Knowledge and Human Nature: a new introduction to an ancient debate*, (Oxford: Oxford University Press), forthcoming 1991.

[2] What distinguishes mechanisms of learning from so-called 'local triggering' of innate knowledge? The difference must lie in the output of the system being a relatively simple mapping or extension of a given input. For the distinctive feature of local triggering is that the output of the language-faculty, for example, should be invariant under a wide range of initial input.

[3] By knowledge which is substantial I mean that which is either contingent, as is our knowledge of the contents of our own minds, or is concerned with some mind-independent reality, as would be our knowledge of mathematics on a Platonist construal

knowledge must be grounded in sense-experience, or in introspection. We may wonder which, if either, of these two strands constitutes the true core of Empiricism; or whether the essentials of the Empiricist project should be characterised in some third way which embraces both.

Clearly the two strands are at least partly independent of one another. For one could believe in the existence of substantial *a priori* knowledge without endorsing Nativism. One could, for example, believe in a special faculty of intellectual intuition, as many Platonists have done. This would accord us knowledge of a realm of mind-independent abstract objects in a quasi-perceptual manner. Although the faculty of intuition itself would be innate, just as the faculty of vision is innate, the beliefs to which it gives rise would not be. Then since belief in the substantive *a priori* does not entail a belief in Nativism, the sort of attack which Empiricists mounted on the substantive *a priori* cannot merely have been part of their campaign against Nativism.

In contrast, knowledge which is innate would at the same time be *a priori*, at least in the sense of not being learned from experience. So to accept that there is substantial innate knowledge would commit one to belief in some forms of substantive *a priori* knowledge. It might then be suggested that the Empiricist opposition to Nativism may be motivated by their opposition to the substantive *a priori*. However, this would hardly warrant an attack on Nativism as such, of the kind that we find in Locke. For an attack on the substantive *a priori* would not, on any account of the matter, be an attack on all forms of innateness. It would only be innate knowledge which would be undermined, leaving innate beliefs, concepts and information-bearing mental structures untouched. Yet Empiricists have characteristically denied all of these ideas also. So their motivation cannot have been a mere consequence of their opposition to the substantive *a priori*.

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of its subject-matter. Note that on this account a proposition can be informative (cognitively significant) without being substantive.

The notion of the *a priori* can be understood in either of two distinct ways—as knowledge which can be arrived at by thought alone, or as knowledge which is not learned from experience. The difference is not presently important, but will shortly prove so.

It might be suggested that I have erred in characterising Empiricism purely negatively, as involving both the denial of Nativism and the denial of substantive *a priori* knowledge. Perhaps a positive characterisation might embrace both. Indeed so: that is just what I seek. But we cannot take the obvious (and traditional) option, claiming that Empiricism consists in the demand that all substantial knowledge must be grounded in experience. While such a demand does indeed rule out both innate knowledge and *a priori* knowledge, we should still be unable to explain the Empiricist opposition to innate concepts, beliefs and information-bearing mental structures, none of which need count as knowledge. Since concepts, for example, might be innate although no knowledge is, the Empiricist insistence that all knowledge must be grounded in experience cannot explain their belief that all concepts, too, must be derived from experience.

Neither will it help to suppose that the basis of Empiricism consists in the positive demand that all concepts should be acquired from experience. While this may entail that there can be no innate beliefs or knowledge,[4] it cannot explain the Empiricist opposition to information-bearing mental structures. Nor is it obvious why it should be thought to rule out the possibility of substantive *a priori* knowledge. For it might be maintained that we can arrive at substantial knowledge of some aspect of the world by thought alone, despite those thoughts employing empirically-acquired concepts. For example, someone might maintain that while mathematical *concepts* are abstractable from experience, mathematical *knowledge* depends rather upon a special faculty of intellectual intuition.

Moreover, both of the above proposals would still leave us in need of an account of the motivation behind the positive demand. Why *should* one believe that all knowledge, or all concepts, must be grounded in experience? Indeed, for all that has so far been said, it may turn out on investigation that the

[4] In fact I doubt this entailment in the case of knowledge. There may be cases where the experiences from which we derive our concepts are insufficiently varied to explain how we can have learned the propositions involving those concepts, which we subsequently come to know. This knowledge may be triggered by experience (and hence be innate) rather than learned from it, while the constituent concepts are empirically acquired.

positive characterisations given above serve merely to mask an underlying disunity of motive. In which case we should have made no progress with our question whether Empiricists, while remaining true to their essential concerns, can be brought to an acceptance of Nativism.

A rather different proposal might be that it is Phenomenalism which is the core Empiricist commitment. If the Empiricist maintains that all knowledge and thought must in the end reduce to patterns within our own subjective experience, then presumably there can be no substantive *a priori* knowledge, nor any knowledge which is innate. Moreover, if the experience in question consists of unconceptualised and unstructured sense-data, as Phenomenalists have traditionally maintained, then presumably neither concepts nor information-bearing mental structures can be innate either.

However, the suggestion is a poor one. Firstly, because it ignores the position of Locke, who certainly thought that we could have knowledge of objects outside us.[5] Admittedly his arguments for this view were weak, and most later Empiricists have believed that he was inconsistent in failing to embrace Phenomenalism, given his general claims about the genesis of concepts and of knowledge. But be that as it may, we can hardly maintain that a commitment to Phenomenalism was fundamental to his position, given his own explicit eschewal of the doctrine.

Secondly, this proposal would still leave a question concerning the motivation behind Phenomenalism. And here the most plausible answer consists precisely in those doctrines which Phenomenalism is currently being used to explain. Rejection of innate knowledge and of substantive *a priori* knowledge together entail that all knowledge must be grounded in experience. Then rejection of innate concepts entails that our very capacity to think must arise out of materials presented in experience. So the experience in question must be initially unconceptualised and (since there are no information-bearing mental structures) unstructured—which is to say, it must consist of sense-data as traditionally conceived of.

A final suggestion might be that the basic concern of early

[5] See the *Essay*, Bk. IV, Ch. XI.

Empiricists was with matters of justification. Perhaps all that unifies opposition to Nativism and to the substantive *a priori* is that neither belief in innate concepts or knowledge, nor the belief that we may obtain substantial information about the world through reason alone, is sufficiently justified to be acceptable. In one way this proposal converges with my own hypothesis, to be developed shortly. But I do not see how it can serve, on its own, to capture the nature of the Empiricist objections to Nativism and the substantive *a priori*. For we should still want to understand just *why* all claims to such knowledge must be insufficiently justified.

II

An Historical Hypothesis. I propose that the core of Empiricism should be seen as lying in the idea that epistemology is constrained by science, and by Psychology in particular. In my view the most basic Empiricist commitment is to the thesis that claims to knowledge should only be granted on condition that they can be rendered consistent with our best theory of the powers of the human mind, and of the mind's modes of access to reality. No knowledge-claims are to be allowed, except where we can provide at least the beginnings of a naturalistic account of the processes through which that knowledge is acquired.[6] Then the basic reason why early Empiricists were opposed to Nativism, was because the only account available to them at the time, of the process through which a belief or concept might come to be innate, was a *non-natural* one, namely direct intervention by God. Although they would have granted that intervention by God was conceptually possible, it conflicted with their overall attempt to fit our idea of ourselves and our knowledge into a broadly scientific framework.

If this were really the reason why the early Empiricists

[6] A *natural* process, as I understand it, is one which falls under causal laws. It is one which can in principle be subsumed within the laws of nature, whether those laws are known by us or not, and whatever form they might ultimately take (it is not presupposed that all natural processes are physical, for example). Note that the Empiricist constraint on knowledge-claims is just that—an additional constraint, be be placed alongside whatever other epistemic norms the subject may endorse. It is therefore not to be identified with Naturalistic Epistemology in Quine's sense, which would *replace* normative epistemology by current science.

rejected Nativism, then why did they not say so? Why did they choose instead, either to argue against Nativism on quite other—mostly feeble—grounds (as did Locke), or not to argue against it explicitly at all? It may be that what I am calling their core commitment formed such a fundamental part of their outlook as to be almost invisible. Alternatively, their reasons may not have been easily expressible in public, for political reasons. Most early Empiricists were also Theists, and even those who were not had to respect the immense political power of the Church.[7] An attack upon Nativism on the grounds that it required us to believe in God's intervention in the human mind, might have seemed like a direct attack upon Theism. For if God exists, why should be *not* intervene in the natural world if he chooses to do so? Instead of facing this issue head-on, the early Empiricists may have chosen either to attack Nativism in other ways, or to assume its falsity and render the hypothesis of Divine intervention unnecessary, by providing an alternative account of the genesis of human knowledge through experience.

The main advantage of my proposal is that it enables us to unify early Empiricist objections to Nativism and to the substantive *a priori* (particularly Platonism). In both cases knowledge-claims were rejected because there was available no naturalistic account of the belief-acquisition processes involved.[8] In the case of Nativism, the hypotheses that either knowledge, concepts, or mental structures embodying information about the world are innate, were rejected because they seemed to require non-natural intervention in the human mind by a veracious God. In the case of the substantive *a priori*, the objection was that there could be no naturalistic explanation of how reason could have acquired the power to generate knowledge of anything outside of itself. It would apparently have required God's intervention to ensure that the structure of our reason accurately mapped the structure of the appropriate

[7] Witness the extent to which Hume had to hide his real views in the *Dialogues Concerning Natural Religion.*

[8] This is why the belief that we have either innate or substantive *a priori* knowledge turns out to be unjustified—because in the absence of any sort of naturalistic account of our mode of acquiring such knowledge, we are unjustified in believing it to exist, given a general commitment to the ultimate explanatory adequacy of science (see the discussion in section V below).

mind-independent realm. The Platonist hypothesis of a special faculty of intellectual intuition, for example, was rejected because we cannot even begin to give an account of the psychological structure of such a faculty, nor of how there could be causal contact between necessarily-existing abstract entities and the human mind.

My proposal also explains why the early Empiricists should have engaged in enquiries which were quite explicitly psychological. From any other perspective, in contrast, the conjunction of psychological with epistemological enquiry must appear seriously confused. For it would surely be one thing to ask how the mind actually works, and how beliefs are in fact formed, and quite another to ask what we can know, and how. The one is a factual, the other should be a normative enquiry. On my reading of Empiricism, however, these questions are intimately related to one another. For if epistemology is constrained by Psychology, then you cannot begin to settle the question what we can know, without at least sketching the outline of the various faculties and psychological processes which are involved in the acquisition of our beliefs. It is because the early Empiricists thought that the theory of knowledge had to be fitted into a broadly scientific outlook and rendered consistent with our best scientific theories, that they regarded epistemological and psychological questions as belonging essentially together.[9]

My account also fits neatly with the ways in which both Locke and Hume explain the motivation of their work.[10] In the 'Epistle to the Reader' of the *Essay* Locke tells us how, in the course of discussions with friends on an unspecified topic, they came to

[9] Their motivation is therefore slightly different from that of A. I. Goldman in *Epistemology and Cognition* (Massachusetts: Harvard University Press, 1986), whose approach is otherwise very similar. Goldman thinks Psychology is relevant to epistemology because, as a Reliabilist, he thinks it necessary to investigate how reliable our belief-acquisition processes actually are. The concerns of the early Empiricists were broader, in that they were attempting to fit our picture of ourselves and our knowledge into a scientific outlook.

[10] Berkeley, however, represents something of a problem for my reading of Empiricism, given the central place accorded to God in his philosophy. (Though even here the role of God is limited to supplying the *data* of experience; God is not supposed to intervene directly in the human mind.) I suspect that Berkeley's basic motives were indeed different, and that he adopted Empiricist premises in order to serve his own theological purposes, rather than as part of an attempt to fit our view of ourselves and our knowledge into a broadly scientific framework.

feel that if they were to make progress with it they should first examine their own mental powers. The task which Locke then set himself was to see what subjects the human understanding was or was not fitted to deal with. In the 'Introduction' he then writes in similar spirit, thus:

> This was that which gave the first rise to this *Essay* concerning the *understanding*. For I thought that the first step towards satisfying several inquiries the mind of man was very apt to run into was to take a survey of our own understandings, examine our own powers, and see to what things they were adapted.

The project was to attempt to settle disputes concerning the extent of human knowledge by first providing an outline of the faculties of the human mind, and of the mind's modes of access to the world, and then to regard knowledge-claims as constrained to be consistent with that account. This is precisely what I am maintaining to be the core Empiricist commitment.

Similarly Hume, in describing the main aim of his work in the 'Introduction' to the *Treatise*, argues that there is a sense in which the science of human nature lies at the foundation of all the sciences, and that we may hope to make progress with the latter by studying the former first. Now he can hardly have meant (can he?) that we should expect particular discoveries in Physics or Chemistry to be consequent upon advances in Psychology. Rather, he is more plausibly read as saying that claims to knowledge, in general, have to be rendered consistent with the powers of mind ascribed to us by our best psychological theories; which is again the core Empiricist commitment. Even more explicitly, in the opening section of the *Enquiry Concerning Human Understanding* Hume writes:

> The only method of freeing learning, at once, from these abstruse questions [of Metaphysics], is to enquire seriously into the nature of human understanding, and show, from an exact analysis of its powers and capacity, that it is by no means fitted for such remote and abstruse subjects.

Here again the project is the core Empiricist one, to constrain

knowledge-claims by our best theories of the mind's natural modes of access to reality.[11]

Notice finally, that on my account the traditional Empiricist insistence that all knowledge must be grounded in experience turns out not to belong to the foundations of Empiricism as such. Rather, the early Empiricists stressed the role of experience in the acquisition of knowledge because it was the only belief-acquisition process of which they could begin to give a naturalistic account. So my proposal not only unifies the Empiricist opposition to Nativism and to the substantive *a priori*, but sees these as flowing from the same underlying commitment as does the Empiricist lauding of experience.

III

Empiricism and Nativism. If I have correctly characterised the core of Empiricism, then contemporary Empiricists need have no objections to evolutionary versions of at least some forms of Nativism. For unlike Divine intervention, the selection of innate characteristics through evolution is certainly a natural process. Indeed, it is one of which we have not only the outline of an account, but a well-developed scientific theory. So for a contemporary Empiricist there can be no objection in principle to the idea of innate concepts or beliefs, nor to innate information-bearing mental structures.

Whether Empiricist objections to innate knowledge will also vanish, may depend very much upon the conception of knowledge endorsed. But there are at least two ways in which innate knowledge might be possible, on an evolutionary account. Firstly, if we accept some form of Reliabilism, then innately determined true beliefs will count as known. For evolution is very probably a reliable process where the determining of innate belief is concerned. This is because the survival-value of a belief is, in general, conditional upon its truth. Secondly, even if we think that knowledge requires

[11] Note how the above quotations seem to echo the Critical Philosophy of Kant. Yet the way in which Kant takes up the Empiricist challenge—which is to explain how reason can have the power to generate substantive knowledge—is not a naturalistic one. It is rather to claim that the basic structure of the world, as object of our experience, is determined by the subjective constitution of the human mind. He also differs in thinking that we can have access to this constitution *a priori*.

justification, innate knowledge will still be possible provided that we accept some form of Coherentist account of justification.[12] For if evolution has provided us with some innate network of coherent (and true) beliefs, which perhaps provides the best explanation of some aspect of our experience (without being learnable from it), then for a Coherentist those beliefs will count as innately known

Contemporary Empiricists may therefore have no reason to deny the existence of innate knowledge. Since we can now provide a naturalistic account of the process through which belief might come to be innate, the Empiricist constraint on knowledge-claims has no application. It turns out that the traditional Empiricist opposition to Nativism is an historical accident.[13]

It also follows from my proposed construal of Empiricism, that contemporary Empiricists should have no objection to some forms of substantive *a priori* knowledge, in any domain in which Nativism is true. For knowledge which is innate will at the same time be *a priori*, at least in the sense that the process through which we acquire that knowledge would not involve any sort of learning on the basis of experience. This is, if correct, a startling result. It means, not only that one can remain an Empiricist while accepting that there are innate information-bearing mental structures and innate knowledge, but also while accepting that there is substantive *a priori* knowledge of the

[12] The problem for a Foundationalist, on the other hand, will be to explain how the basis of innate knowledge can be both self-justifying and genuinely substantive. For even if it consists of truths which we find ourselves unable to deny, if they concern some reality independent of our minds then there remains the question why we have reason to think that our intuitions on the matter should be reliable. This was the problem Descartes saw clearly, and which led him into the notorious Cartesian Circle. It seems doubtful whether an appeal to evolution could have been of any greater use to him.

[13] There is apparently a problem for me here, concerning 20th century Empiricists like Russell and Ayer, who continued to oppose Nativism despite the availability of evolutionary explanations of innateness. What I maintain in reply is that they had lost sight of the concerns which had motivated the early Empiricist project of constraining human knowledge by our best conception of the mind's powers and modes of access to reality. They therefore become locked into the Phenomenalist enterprise beyond the point where it was necessary to be so. Note how even a contemporary Empiricist like Quine makes only the most minimal of concessions to Nativism, through allowing that there are innate similarity spaces (see his 'Natural Kinds' in *Ontological Relativity and Other Essays*, New York: Columbia University Press, 1969). This is only to allow that the data of experience have, innately, some degree of structure.

world. This gives rise to a plausible objection to my position. For there is now a real danger that I have construed Empiricism in such a way that its distinctness from Rationalism will disappear altogether. To this issue I now turn.

IV

The Persistence of Conflict. If evolution has provided us with substantive innate knowledge, either of our own psychology or of the natural world, then such knowledge will at the same time be *a priori*. But the sense of '*a priori* knowledge' here is quite other than what philosophers generally understand when they employ the phrase. In particular, the knowledge in question will not have been obtained simply through thinking it, by a process of reasoning alone. Thus innate knowledge of folk-psychology, for example, would not involve beliefs which can be discovered to be true just by thinking of their subject-matter; nor would their content be intuitively certain. Rather, finding ourselves with those beliefs already, they would constitute knowledge provided that they are both true, and either have been reliably acquired through evolution or give a coherent explanation of human behaviour.

What therefore emerges is this. Empiricists who accept the existence of substantive *a priori* knowledge, through accepting some form of evolutionary Nativism, can still maintain their opposition to the characteristic Rationalist thesis that we may obtain substantial information about the world (or about ourselves) through reason alone. Indeed they will continue to demand a naturalistic explanation of how reason can have acquired the power to generate truths about things outside of itself. It seems unlikely that any adequate answer to this can be provided, in turn, by reason alone. It will rather require the backing of some evolutionary (and hence empirical) explanation, if reason's claims to knowledge are to be allowed. So at least one aspect of traditional debates between Empiricists and Rationalists can survive my proposed account of the core of Empiricism.

The main issue remaining, then, is whether an evolutionary Nativism can be used to render acceptable to a contemporary Empiricist some of the particular beliefs traditionally defended by Rationalists. I do not believe that it can. Consider Platonism, for example. If there is a problem about how abstract objects

could affect our minds to induce in us true beliefs about the abstract realm, is there not equally a problem about how such beliefs might have been selected in evolution? What needs explaining is how true beliefs about the abstract world, as such, could have survival-value. You cannot eat an abstract object, nor poison yourself on one. Nor can ignorance of an abstract object lead you to be eaten by a tiger or drowned in a flood. So how would humans who happened to have true beliefs about Platonic objects (or an innate faculty of intuition whose constituent structure mirrored the relations obtaining between those objects)[14] have had a better chance of surviving or reproducing than those who did not?

Of course mathematical and logical truths can be extremely useful to those who possess them, for example in calculating what would be a sufficient store of food to see one's family through a winter. Empiricists have traditionally provided a number of explanations of such usefulness, ranging from the suggestion that the truths in question are concerned with relations between our concepts, to the idea that they are in fact high-level empirical generalisations. But what is hard to see, is how facts about Platonic objects could enter into the explanation of the usefulness of mathematics and logic. If abstract objects cannot causally affect the natural world, then presumably there is at most some sort of structural correspondence between the two realms, in virtue of which pure mathematics can become applied. Then knowledge of these structural features of the natural world itself would suffice for whatever practical advantage is to be gained from mathematics.

Another way to make the point is as follows. Mathematics and logic, construed Platonistically, are supposed to consist of truths which obtain objectively with respect to every possible world. But how would true beliefs about such objective necessities confer any evolutionary advantage in *this* world? The most that one would need, to gain all the survival-value of an objectively necessary proposition, would be a belief which is true with respect to that segment of the set of all possible worlds which corresponds to the set of situations which are nomologically possible in the actual world. For human beings only have to be

[14] This is the view developed by Jerrold Katz in *Language and Other Abstract Objects* (Oxford: Blackwell, 1981).

fit to survive in this world, in a variety of different physically possible circumstances within it. They do not have to be fit to survive in all logically possible worlds. Now the point here is not that evolution cannot secure more than is necessary to meet the needs of survival. Plainly it can, if random mutations are what fuel the evolutionary process. It is rather that evolutionary selection of belief is only a *reliable* process to the extent to which it is the truth of the belief which confers advantage in survival.[15] When it comes to beliefs whose contents go beyond those structural features of the natural world which may matter for survival, natural selection is just as likely to produce beliefs which are wrong as right. It will not matter for survival if innate beliefs are false with respect to all other possible worlds, provided that they are true in this one.

It might be replied that in disciplines such as mathematics and logic, beliefs which are not necessarily true are necessarily false. So the only way in which evolution could gain the survival-value of mathematical truth-in-this-world, would be through selecting beliefs which are true in all possible worlds. This is no doubt correct, if the only alternatives one thinks of to necessary truths such as '2 + 2 = 4' are necessary falsehoods such as '2 + 2 = 5'. But in fact there are also more complex falsehoods such as 'In worlds close to the actual world 2 + 2 equals 4, whereas in all other possible worlds 2 + 2 makes something else'. This, while perhaps necessarily false, would confer on one who believed it all of the survival-value of '2 + 2 = 4' in the actual world in which we find ourselves.[16]

It appears that the Empiricist objection to Platonism remains

[15] Cast in Justificationalist mode, the point is that the innateness of our beliefs would fail to provide any reason for thinking them to be true, where their content goes beyond anything which could aid survival in the actual world. Those beliefs could just as well be false as true.

[16] There are two distinct arguments here, depending upon what conception of knowledge is endorsed. Suppose we are Reliabilists. Then the fact that evolution could equally well have selected for us a psychology which would have led us to find false mathematical beliefs intuitively acceptable, is sufficient to show that it is not a reliable process with respect to the Platonic domain; hence undermining our claim to innate knowledge. Suppose, on the other hand, that we accept some form of Coherentism, while also endorsing the Empiricist constraint. Then we shall only be justified in maintaining our mathematical beliefs (given a Platonist construal of their subject matter) if we can explain why evolution should not instead have given us a set of beliefs which—while we should now be inclined to describe them as false—would yet have struck us as equally plausible and coherent.

intact, even given my construal of the core of Empiricism, and the consequent Empiricist acceptance of evolutionary Nativism. I believe that contemporary Empiricists can remain equally opposed to Rationalist claims that we can have *a priori* knowledge of the existence of God, the existence and immortality of the soul, and the freedom of the will; though I shall not argue this in any detail here. The main problem is to explain how evolution can have been reliable in selecting a faculty of reason with the power to obtain such knowledge. For it is hard to see what advantage such a faculty would confer in survival.[17] I therefore conclude that my proposed account of the core of Empiricism may leave much of the traditional dispute between Empiricists and Rationalists intact. While both sides may now accept the existence of innate knowledge, concepts, and information-bearing mental structures, they can remain divided over the general claim that substantial knowledge is possible through thought alone, as well as over many specific claims to knowledge.

V

Defending the Empiricist Constraint. Should we, today, be Empiricists? Are there any convincing reasons for thinking that knowledge-claims should only be endorsed where we can provide some sort of naturalistic account of the relevant belief-acquisition process? While this is too large an issue to be dealt with properly here, there is still a point in raising it. For it will enable us to approach the question of the underlying motivation behind the core Empiricist constraint. Why would anyone *want* to constrain epistemology by Psychology?

It is clear that knowledge-claims should not in general be endorsed where they are in conflict with our best scientific theories. At the very least we should suspend judgement, in virtue of the principle that one should not hold inconsistent

[17] Note that in order for evolutionary selection to count as reliable, the survival-value of an innate belief or faculty of reason has to be contingent upon *truth*. So it is no good appealing to the supposed social benefits of religious belief in this connection, for example, since those benefits would presumably remain, whether or not the belief in question were true. The difficulty is to find some way in which truth would matter here, without violating the Empiricist constraint of allowing only natural processes into the account (as would an appeal to God's intervention in the world in response to prayer).

beliefs. But it might be denied that it follows from this, that if we are to claim knowledge of some matter we must therefore be able to provide a scientific account of the process through which the knowledge in question would be acquired. For a belief can surely be consistent with a body of scientific theory without our possession of it being explicable in terms of that theory. However, the distance between these two requirements is smaller than it appears. For recall that the Empiricist insists only on the *beginnings* of a naturalistic account of the relevant belief-acquisition process. In general the reason why we are unable to provide even the beginnings of such an account, is that current scientific theory implies that there is *no such process.*

But can it really be reasonable to deny that we have knowledge of some matter (or at least to suspend judgement) merely because our present scientific beliefs provide us with no materials with which to frame a remotely plausible account of how we might have acquired that knowledge? Let us consider an example in some detail, as a test-case. Suppose that some person, or group of persons, claims to be *prescient.* That is, they claim to have intuitive (non-inferential) knowledge of the future. And let us suppose that their predictions seem very often to turn out right. Suppose further, that the nature and precision of their predictions seems to rule out fraud, unconscious inference from knowledge of current tendencies, or the kind of mere illusion of accuracy familiar to students of Astrology. Yet of course we have not the faintest idea how there can be a reliable way of acquiring beliefs about the future *except* by inference from current tendencies. For how could a future event exert any kind of influence on the human mind? How could the mere fact that an event *will* take place at a particular time in the future give rise to any natural process bringing someone to believe that it will? The idea seems barely intelligible, given current beliefs about the natural world. Yet in this example we would apparently have powerful reasons for thinking that these people have knowledge of the future, based upon their past success. So it would appear that we ought to grant that they have knowledge, although we cannot provide even the beginnings of a naturalistic account of the belief-acquisition process involved, contrary to what the Empiricist claims.

Now in one respect this example provides a tougher opponent

for Empiricism than those which it has traditionally faced. For there is no obvious way of reinterpreting the content of the beliefs in question so as to render their mode of acquisition less problematic. In connection with logical and mathematical beliefs, in contrast, just such a move is available, though the extent of its success is still controversial. Empiricists can (and do) claim in such areas that the beliefs merely concern conceptual structures which are dependent upon the human mind, or at most that they concern abstract objects which supervene on our minds.[18] So we might respond to the example by weakening the Empiricist constraint on knowledge claims. We could say that claims to knowledge should not be granted where we cannot provide any sort of natural account of the process through which the beliefs are acquired, *unless* the evidence for the existence of some sort of reliable process is overwhelming, and *unless* there is no possibility of reinterpreting the subject-matter of the beliefs in question so as to render our mode of access to it less problematic.[19]

In fact we may also respond to this example more directly. We can insist that it is merely imaginary, and that *in fact* prescience will never occur. For Empiricists need not be claiming to know *a priori* that all knowledge must arise through natural processes. Rather, their attitude results from a more general commitment to the ultimate explicability, in principle,[20] of all natural phenomena including belief-acquisition. An Empiricist will therefore be prepared to bet that no genuine case of prescience (not attributable to fraud, unconscious inference from current tendencies etc.) will ever in fact occur, precisely because our

[18] See my *Tractarian Semantics* (Oxford: Blackwell, 1989), Ch. 9 for a brief development of this latter idea.

[19] Empiricists may then, on my account, find themselves forced to allow that we have *a priori* knowledge of a Platonic realm, unless some alternative construal of the subject-matter of our mathematical beliefs can be made out, or unless one can account for the usefulness of mathematical beliefs without supposing that they are true (as Hartry Field attempts to do in *Science without Numbers*, Oxford: Blackwell, 1980).

[20] Since Locke, for one, believed that there are natural processes which will forever outstrip our powers of explanation, he cannot have been committed to the idea that science *will* prove explanatorily adequate. Yet one could plainly have reason to think that there is some natural mechanism underlying a given phenomenon, even if one thought that we could never have detailed knowledge of it. The crucial commitment is to the claim that *all processes in nature are natural ones*, happening in accordance with causal law.

inability to frame even the beginnings of a naturalistic explanation of such a phenomenon gives us reason to believe that there is no such belief-acquisition process.[21]

Looked at in this way, Empiricist constraints on knowledge-claims may be seem to stem from a more general belief in the ultimate adequacy of science. The sequence of thought would be this. If in these circumstances we were to possess knowledge of the matter in question (the future, say) then our beliefs would have to result from a natural (and reliable) process. But if our current science is such that we cannot even begin to frame a plausible hypothesis as to what that process might be, then this in itself provides us with good reason to doubt its existence. And this is, surely, exactly how we would respond to the imagined case of prescience. Given what we already know about the world, we may be sure that it will never happen.[22]

[21] Note that the Empiricist constraint on knowledge-claims is by no means infallible. Plainly it cannot be, since it led the early Empiricists to deny the truth of Nativism—as it turns out, incorrectly. It may nevertheless be reasonable to accept the Empiricist commitment to the ultimate (or in principle) explanatory adequacy of science, given the huge success of science in the past. We shall then have reason to deny that some suggested phenomenon will ever really occur, if we cannot begin to see how that phenomenon could ever receive an adequate natural explanation. Into this category fall not only claims of prescience, but also Astrology, magic and many alleged psychic phenomena.

[22] An early version of this paper was given as a talk at the University of East Anglia, where much became clearer to me in the course of the subsequent discussion. I am also grateful to David Archard, David Hills, Louis Loeb, Cynthia Macdonald, A. D. Smith, David Velleman and Tim Williamson for their comments on earlier drafts.