The Empiricist Conception of Experience

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One of the most appealing features of empiricism is its promise to be economical, to avoid appeal to such mysterious or problematic devices as innate ideas and *a priori* principles. Like almost every non-sceptical epistemological theory, empiricism takes experience to be *a* source of real information; the theory's distinctive feature is its insistence that nothing other than experience has such a role.

When we characterize empiricism in this way, in terms of what it excludes after the admission of experience, it may seem that the only sensible (or non-sceptical) way to argue against it would be to grant the point about the importance of experience as a source of information, but attempt to show that we do have extra sources of information beyond experience; perhaps something like rational intuition is needed in order for us to construct an adequate picture of the world out of the materials provided by experience.[1] But empiricism has an immediate response to this strategy of adding something to experience: whatever we add to experience must not conflict with it, if our epistemology is to be coherent. So, once we have made the eminently reasonable move of admitting experience as a substantive source of knowledge about the world, we should be allowed to add only such further sources of knowledge as are guaranteed to be 'safe': perhaps only knowledge of trivialities like verbal equivalences or indexical claims like 'I now exist'.[2] To claim to possess more substantive *a priori* knowledge—say, to know *a priori* the principle of the uniformity of nature—would be to risk forgetting our clearly rational promise to respect the deliverances of experience, whatever they might be. So there seems to be a very short path

[1] See, for example, Laurence BonJour's, *In Defense of Pure Reason* (New York: Cambridge University Press, 1998). BonJour is willing to grant, if only for the sake of argument, that we have 'certain "foundational" beliefs that are fully justified by appeal to direct experience or sensory observation alone'; we need the *a priori*, he argues, in order to get from these primitive *a priori* judgments to the more sophisticated judgments—about the past, the future, unobserved things and generalities—that also seem to lie within our epistemic capacity. (p. 4).

[2] A recently influential defense of the claim that *a priori* knowledge must be limited in just this way is Philip Kitcher's, 'A Priori Knowledge', *Philosophical Review,* **89**, No. 1 (January, 1980).

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from the quite uncontroversial admission of experience as a source of real information to the quite controversial rejection of all non-trivial *a priori* knowledge.

What I will argue in this paper is that even the healthiest respect for the deliverances of experience does not have this negative result for substantive *a priori* knowledge, because there is more than meets the eye in the commitment to take experience as a source of information about the world. To make the kind of epistemic use of experience that empiricism demands, we need at least the capacity to sort out its deliverances from other products of the mind—imagination, dreaming, and so forth—and this sorting task is, I will argue, both a rational enterprise and one that demands substantive *a priori* knowledge for its execution. Thus there will be a sense in which we could accept the empiricist project of excluding other sources of knowledge after the admission of experience, without excluding other sources of knowledge altogether, if we can show that the admission or recognition of experience itself requires substantive *a priori* knowledge. What is most surprising is that we can find elements of this basically Kantian line about experience even in the work of the staunchest empiricists. After a brief look at what Locke has to say on this front, I will turn to the work of Bas van Fraassen: when we examine what these two empiricists need to say about the recognition of experience, we shall see that neither traditional nor contemporary empiricism is as economical as it might at first have appeared, and that there might be no such thing as a pure empiricism which succeeds in banishing all substantive *a priori* knowledge.

I

According to Locke, our understanding of the world is composed just from the simple ideas we receive through sensation and reflection; these simple ideas, however, enter not only into our experiences and our efforts to represent things as they are, but also into our dreams and fancies. Whatever it is that separates the sober and wise man from the warm-headed enthusiast, Locke notes, it is not that the enthusiast is conscious of a different type of object: both are conscious only of their ideas.[3] But it evidently matters very much that we should be able to tell who is the dreamer; in fact, Locke is at one point willing to describe epistemic evaluation as having this sole task: 'It matters not what Men's Fancies are, *'tis this*

[3] John Locke, *An Essay Concerning Human Understanding,* P. H. Nidditch (ed.), (Oxford: Clarendon Press, 1975), IV.iv.1. See also *Essay*, I.i.8, where the idea is defined as 'whatsoever is the Object of the Understanding when a Man Thinks.'

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alone that gives a value to our Reasonings, and preference to one Man's Knowledge over another's, that it is of Things as they really are, and *not of Dreams and Fancies*.'[4] My mere consciousness of my ideas is not enough: if my reasonings are to have value, and if I am to escape the predicament of the enthusiast, I must be able to distinguish my fancies from my actual sensations, reasonings, or whatever other modes of entertaining simple ideas actually get me in touch with 'Things as they really are'.

In moving to the first person here—demanding that *I* must be able to distinguish my modes of thought—we should note that an extra step has been taken. It is one thing to say that experience and reverie have different proportions of influence on the opinions of the sober and the warm-headed man; it is another to say that the sober man himself must be able to see when he is having an episode of experience. However, it is not hard to see the appeal of tackling this problem as Locke himself does, in this stronger first-person form. We want to ascribe this kind of self-consciousness to a good epistemic agent: we would like the sober man to have some insight into the formation of his opinions. We want more than a happy correlation between sensation and opinion, on the part of the knower: when challenged about a belief, the knower should ideally be able to tell us about the way in which it arose within him, for example by telling us about his experiences. Also, if he himself can see the differences between experience and reverie, then the sober man can take more responsibility for the formation of his opinions; in addition to any intrinsic merits, this falls smoothly into line with Locke's general thesis that error results from culpable haste and carelessness.[5] Lastly, Locke has his reasons of method: given his larger project of attempting to investigate the operations of mind by observing his own mind, we should expect that Locke would attempt to show that the subject can himself determine the differences among his modes of thought. Indeed, Locke adheres resolutely to his introspective method in the passage that deals most directly with the question of how we recognize sensation as such:

> There can be nothing more certain, than that the *Idea* we receive from an external Object is in our Minds; this is intuitive knowledge. But whether there be any thing more than barely that *Idea* in our Minds, whether we can thence certainly inferr the existence of any thing without us, which corresponds to that *Idea*, is that, whereof some Men think there may be a question made, because Men may have such *Ideas* in their Minds, when no such

[4] *Essay*, IV.iv.1. My emphasis.
[5] *Essay*, IV.xx; see also II.xxi.56.

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> Thing exists, no such Object affects their Senses. But yet here, I think, we are provided with an Evidence, that puts us past doubting: For I ask any one, Whether he be not invincibly conscious to himself of a different Perception, when he looks on the Sun by day, and thinks on it by night; when he actually tastes Wormwood, or smells a Rose, or only thinks on that Savour, or Odour? We as plainly find the difference there is between any *Idea* revived in our Minds by our own Memory, and actually coming into our Minds by our Senses, as we do between any two distinct *Ideas*.[6]

The smell of a rose is a simple idea, for Locke, and it is the same simple idea whether presently sensed or remembered; however, the sensation and the memory constitute different *perceptions*, and indeed, the difference between these perceptions is as plain as the difference between two ideas.[7] It is so clear, in fact, that Locke doubts that we can seriously raise the question of the legitimacy of sensation: we are 'invincibly conscious' of the difference between the two types of perception. Even the sceptic, according to Locke, cannot really deny the basic characteristics of his consciousness of things: 'I believe he will allow a very manifest difference between dreaming of being in the Fire, and being actually in it.'[8] Again, it is not that the sceptic should be able to discern some difference between dreaming and sensation on careful reflection; this difference is *manifest,* it is immediately evident in a way that the sceptic can only pretend not to notice. It is in virtue of our capacity to recognize this manifest difference among our perceptions—to be conscious not only of the smell of the rose *simpliciter* but of this smell as arising from a present sensation—that we gain what Locke calls sensitive knowledge, knowledge of the existence of the particular finite things about us.

What is this difference among our perceptions, or among the modes of presentation of our simple ideas? How does the presently sensed smell of the rose differ from the mere recollection of it? The most obvious answer is that they differ in the circumstances of their production, and this is an answer Locke elsewhere employs, for

[6] *Essay,* IV.ii.14.

[7] Which is to say, very plain indeed: the difference between two distinct ideas is something we know as well as anything can possibly be known, according to Locke. He claims that 'the Mind clearly and infallibly perceives each *Idea* to agree with it self, and to be what it is; and all distinct *Ideas* to disagree, *i.e.* the one not to be the other: And this it does without any pains, labour, or deduction but at first view, by its natural power of Perception and Distinction.' *Essay,* IV.i.4.

[8] *Essay*, IV.ii.14.

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example in distinguishing remembrance from sensation by saying just that in remembrance 'the same *Idea* ... again recurs without the operation of the like Object on the external Sensory.'[9] But the obvious difficulty is in explaining how these distal differences could have proximal effects that would make them manifest to consciousness, that would make the memory and the sensation into different perceptions. Could a perceptible sentiment mark the difference between the presence and absence of the 'object on the external sensory'?

If we keep in mind Locke's central claim that simple ideas are ultimately all that the mind is ever conscious of, we should expect that the only way in which we could be conscious of a difference between these perceptions would be in virtue of their being constituted by different sets of simple ideas. The simple idea of 'rose-scent' is present in both perceptions; in addition, perhaps each perception contains an extra idea or set of ideas that serve to make us conscious of the mode of thought we are presently enjoying:[10] let us say the sensation of the rose scent comes with the sense-idea (whatever that might be), the recollection with the recollection-idea, and so forth.[11] For convenience, let us dub these proposed ideas or sets of ideas that tip us off as to our mode of thought the 'earmarks' of our perceptions; the ideas they mark will be dubbed 'contents'.

Locke himself seems to be outlining such a proposal in the continuation of the passage on sensitive knowledge, with the suggestion that the earmark of sensation could be some sense of pain or pleasure. To answer the sceptic who pretends not to recognize the manifest difference between sensations and dreams, Locke contends 'That we certainly finding, that Pleasure or Pain follows upon the application of certain objects to us, whose Existence we perceive, or dream that we perceive, by our Senses, this certainty is as great as

[9] *Essay*, II.xix.1.

[10] Note that Locke does not need to make the implausible claim that, *when we are dreaming,* we must be aware of that fact; it is enough that we are conscious of sensation as such, and can sort out our modes of thought in certain moments of waking lucidity. Also, one might charitably increase the plausibility of Locke's position without doing much violence to it by taking our exercise of this capacity to distinguish our modes of thought to be fallible: perhaps even the sane and sober man is occasionally misled by an illusion.

[11] Indeed, it sometimes seems that Locke does want to see things along these lines: in his discussion of memory in Book II, for example, he claims that what memory amounts to is that 'the Mind has a Power, in many cases, to revive Perceptions, which it has once had, with this additional Perception annexed to them, that it has had them before.' *Essay,* II.x.2. But we shall soon see that this 'additional perception' cannot simply be an extra idea.

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our Happiness, or Misery, beyond which, we have no concernment to know....'[12] Locke does not say that the noticeably distinctive character of sensation is *exhausted* by this association with pleasure and pain, but there is evidence in the *Essay* that Locke puts great weight on the cognitive significance of these affects. In Book II, he contends that the 'infinite Wise Author of our being ... has been pleased to join to several Thoughts, and several Sensations, a *perception* of *Delight*', that God has also established in us a capacity to prefer this pleasure, and that this arrangement is so important that

> If [pleasure] were wholly separated from all our outward Sensations, and inward Thoughts, we should have no reason to preferr one Thought or Action, to another, Negligence, to Attention; or Motion, to Rest. And so we should neither stir our Bodies, nor employ our Minds; but let our Thoughts (if I may so call it) run a drift, without any direction or design, and suffer the *Ideas* of our Minds, like unregarded shadows, to make their appearances there, as it happen'd, without attending to them. In which state Man, however furnished with the Faculties of Understanding and Will, would be a very idle unactive Creature, and pass his time only in a lazy lethargick Dream.[13]

The counterfactual predicament Locke describes here is just the predicament of the man who is unable to distinguish his modes of thought: all is as a dream to him, and no idea stands out as real, or seizes his attention as something true, worth believing in.[14] Applied to the specific case of sensitive knowledge, when the simple ideas of

[12] *Essay,* IV.ii.14. Locke's initial wording here is puzzling: wasn't the sceptic's question exactly whether we were suffering 'the application of certain objects to us'? If we can already recognize the application of objects, then there is no need to go through the additional steps concerning the pain or pleasure they bring, and the extent to which this should make them real for us. On one possible reading of this passage, we can take this wording as rhetorical extravagance, and emphasize the rest of the sentence. Perhaps what he means to say is that if some *content* is accompanied with pleasure or pain, then it represents something that is as real as we ever have reason to care about; a logical demonstration of the independent metaphysical existence of the object is not something we need to seek. Another reading of these lines will be proposed below.

[13] *Essay,* II.vii.3.

[14] In fact Locke has a broader goal in mind here than in his later discussion of sensitive knowledge: here we have the sense that even abstract thought (say, successful geometrical reasoning) is only possible because God has configured our minds in such a way that we will find certain progressions of ideas and not others to be pleasurable and for that reason worth pursuing. This section owes much to conversations with Hans Lottenbach.

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heat, brightness and warmth are really sensed and not just imagined, they are (by the wisdom of our Maker) conjoined with feelings of pleasure, or, when we are standing too close to the fire, pain. Certain streams of ideas are, in Humean language, made more vivid for us with the addition of these degrees of pain and pleasure; these vivid streams of ideas are sensations and sound reasonings, happily getting us in touch with 'Things, as they really are'. Our fantasies and mere contemplations, by contrast, are languid and aimless. Unless we are struck with some pathology or enthusiastic perversion, we will be able to tell the difference, we will have the appropriate and natural preference for pleasure, and direct our cognition accordingly.

At first sight this proposal seems perfectly empiricist: we are able to gain knowledge of 'Things, as they really are' because successful, truth-oriented cognition (and, in particular, real sensation) is marked by a perceptible sentiment. But to posit that certain ways of thinking are specially marked in ways that we are predisposed to favour might seem to amount to the admission of *a priori* principles of knowledge by the back door. Do we know innately that pleasure is the sign of the real and true? To defend his empiricism, Locke would need to show that there is a difference between having innate knowledge and being divinely programmed to take seriously exactly those streams of ideas that are spiced with pain and pleasure. (Or with whatever other 'earmark' ideas are to function as the signs of true sensation.)

Against the charge of innatism, Locke has his choice of two basic strategies: he could either claim that the cognitive dispositions to which he appeals are a form of knowledge that we acquire in typical empiricist fashion, in the course of experience (we *learn* our cognitive responses to pleasure), or he could argue that although the dispositions play a role in our acquisition of knowledge, they do not themselves constitute knowledge, properly speaking (God has made us cognitive hedonists, but he has *not* inscribed upon our minds some knowledge of the truth that pleasure is the sign of the real). The trouble with the first strategy, in which the connection between pleasure and reality is learned from experience, is just that this connection is appealed to in Locke's explanation of all learning from experience. Because we cannot even distinguish experience from reverie until we are disposed to associate pleasure with reality, we cannot rely on experience itself to teach us this association.[15] Unless we are predisposed to see the specially marked ideas as showing us

[15] As long as recognition of experience as such is necessary for the deliverances of experience to have a special epistemic value, that is. Here naturalists may part company with Locke.

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how things really are, experience will teach us nothing. Similar reasoning shows what is wrong with the related suggestion that earmark-interpretation starts out as something instinctive in us, unworthy of the name 'knowledge', but then comes to be rational when we recognize that it is confirmed by the course of experience. We cannot take anything to be 'confirmed by experience' until we are able to distinguish experience from fantasy and all the other modes of thought: empirical confirmation *requires* an ability to recognize experience.

The second empiricist strategy now appears more tempting: perhaps it was wrong to think that cognitive hedonists need to be seen as *knowing that* pleasure (or whatever the earmark of sensation really might be) is the sign of the real and true. What if the dispositions by which we distinguish our modes of thought are *always* matters of mere instinct? Sorting sensation from reverie, on this view, is a non-cognitive matter: we simply respond differently to contents depending on the ways in which they are earmarked, without having to know anything about the differences among our modes of thought in order to do this. This naturalistic version of Locke's position could seem sceptical: if I am only instinctively driven to take a certain idea as a sensation, without knowing that it is one, how can I be justified in my claims about the external objects before me? Some ground might be regained by insisting on the distinction between the perspective of the epistemologist and that of the man in the street. Even if the interpretation of earmarks is merely instinctive for the man in the street, the epistemologist can justify that man's instinctive interpretive activity in a way that will vindicate his claims to knowledge. But Locke needs to offer more of a justification here than we have seen so far: he gains no edge over the innatists in explanatory power if he says just that men in the street are (for the most part) made to think in certain uniform ways by the help of God, and that very conveniently these ways match the ways things really are. To give us a substantive explanation of sensation, Locke must say more about whatever it is that is that sets it apart from mere reverie, other than that it is the bearer of pleasure.

Here we return to the circumstances of production: the main distinctive feature of sensation, in Locke's account, is that the ideas we receive in sensation are caused by the objects we sense. Ideas of sensation may be produced only by such things as are 'so constituted in Nature, as to be able, by affecting our Senses, to cause any perception in the Mind.'[16] Locke does gain some real mileage here: describing sensation in these causal terms gives us an explanation of intersubjective agreement about what we sense that is no longer as ad hoc as the simple pleasure theory. (And nothing stops Locke

[16] *Essay*, II.viii.1.

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from claiming that certain kinds of causal process also deliver pleasure to us, as a manifest sign.) Locke seems to have taken it to be a rather obvious fact that sensation has this kind of causal structure—'there can be nothing more certain, than that the *Idea* we receive from an external Object is in our Minds'—but it is not obvious how his theory of knowledge can explain anyone's knowledge of this fact about our causal connection with external objects. To be strictly consistent in his account, even the reflective epistemologist must start out with no innate knowledge of the causal structure of the world, and no innate knowledge of the differences between his modes of thought.[17] But everywhere we look in the *Essay* it seems that this much is already known, as if innately.

In particular, when we look at those passages in the text where we would expect to find the materials for an account of how anyone knows the relation between ideas of sensation and real external objects, we only find support for Thomas Hill Green's charge that Locke's epistemology begins not with the bare idea, but with the idea already known to originate in a particular way from an external object.[18] When we look at Locke's discussion of our acquisition of the idea of power, for example, we find that this idea is extracted out of our pre-existing understanding of the differences among our modes of thought. Locke opens his discussion of the origin of the idea of power as follows:

> The Mind ... observing a constant change of its *Ideas*, sometimes by the impression of outward Objects on the Senses, and sometimes by the Determination of its own choice ... considers in one thing the possibility of having any of its simple *Ideas* changed, and in another the possibility of making that change; and so comes by that *Idea* which we call *Power*.[19]

The idea of power, as explained in this passage, could not enable us to understand the distinction between sensation and other modes of thought; if we did not already see sensation as the passive reception of an impact causally impressed on the senses, we would be unable

[17] We should note at some point that the 'Cartesian' strategy of verifying the connection between our ideas and reality through a proof appealing to God is not available to Locke, given his anti-innatism and rejection of the possibility of a purely *a priori* proof of God's existence or characteristics.

[18] According to Green, 'this idea, as such, in its prime simplicity, recognizes itself as the result of, and refers itself as a quality to, the matter supposed to cause it.' *Works,* R. Nettleship (ed.) (London: Longmans, Green and Co., 1894), Vol. 1, p.13.

[19] *Essay,* II.xxi.1.

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to come up with the idea of power from the introspective exercise Locke sketches for us here.[20]

If we do not acquire our knowledge of the basic nature of sensation in experience, then it seems this knowledge must be innate.[21] And although we should be reluctant to read Locke as ascribing to us any measure of innate knowledge, it is true that our having innate knowledge of the workings of sensation would make better sense of his discussion of pleasure and pain. Pleasure could be a result of successful cognition without being the only thing that separates thinking well from thinking poorly. If we know innately that there is a causal order in the world, that our fleeting ideas of sensation

[20] Similarly, Locke's account of our acquisition of the idea of cause and effect does not suppose that we are comparing bare ideas, but starts rather with 'the notice, that our Senses take of the constant Vicissitude of Things.' (*Essay*, II.xxvi.1) In recognizing a thing, we already have something more than the bare presentation of an idea to consciousness; in order to be conscious of the existence of a thing, we must be conscious of our ideas of it as arising from an external cause. Although this passage may do something to explain how we might become aware of the content of specific causal mechanisms (how it is, for example, that we come to be aware that heat causes fluidity in wax), it does not explain how we might come to know that our ideas are arising from external things. I do not mean to imply that Locke should be *faulted* for this reliance on conscious sensation: it is not clear how we could form the right ideas of concrete causal relationships if we must start with raw ideas (indifferently, the products of sensation, daydreaming, memory, etc.), rather than ideas already taken to be the effects of things. If we take a series of raw ideas, not distinguished as to mode of thought or referred to external causes, then we cannot distinguish which changes of ideas represent objective changes, let alone instances of causation.

[21] A full treatment of this issue would have to address Locke's treatment of the limits of imagination, in virtue of which we seem to have various items of knowledge. The discussion of substance begins with a comment that we are unable to imagine how there could be free-floating qualities as opposed to qualities inhering in an object (II.xxiii.1); at II.xxi.73 Locke suggests that we are unable to see our ideas except as originating causally in things; at II.xvii.1 Locke argues not only that we are unable to think of two objects co-existing in the same place at the same time, but that this inability on our part is sufficient for us to 'rightly conclude' that it is impossible for this to happen. If we emphasize the modal force of 'inability' we see that this kind of knowledge is certainly not knowledge of the usual empiricist sort; our *inability* to conceive of qualities except as inhering in substances is not something we could know as a result of acquiring or comparing any finite set of simple ideas. Even if he is helping himself to innate general principles, it may still be the case that Locke achieves a superior economy in his epistemology than an innatist like Cudworth, for whom each judgment requires a separate seed of innate knowledge.

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have their origin in stable and lasting objects, then there will be independent standards by which we can defend our claims to have perceived, rather than merely imagined things. We could be immediately conscious of 'the application of objects to us' (to return to Locke's reply to the sceptic) in taking some given idea to be an instance of this already-known relation of sensation: sensitive knowledge of external objects is enabled 'by that perception and Consciousness we have of the actual entrance of *Ideas* from them.'[22] The difference between sensation and imagination is manifest to us, on this reading of Locke, not simply because the content of a sensation comes with an extra feeling attached to it, but because we think of our sensations differently, taking them to be the products of objects present to us. To the sceptic who challenges the possibility of real sensation, Locke can point out that we do in fact find cognitive satisfaction in thinking this way. As long as we are persuaded that introspective psychological examination is our best hope in epistemology, we can ask for no higher evidence.

Ultimately, the difficulty that Locke's empiricism encounters is that we cannot see the relation between ideas and objects in sensation to be itself just a contingent, empirically discoverable one; or if we do try to see it this way (as with the first pleasure proposal) then the theory is no longer epistemologically satisfying—to maintain our claim that sensation deserves such special epistemic weight we need to take on some ad hoc assumptions about how God has arranged things. Yet these troubles may seem to arise not from the basic structure of empiricism, but instead from certain peculiarities of Locke's version of the position, especially his commitment to the theory of ideas and his reliance on a notion of causation that has since Hume been recognized as problematic for empiricism. Here it is useful to turn to a version of empiricism that dispenses with ideas (in anything like Locke's sense) and causation altogether; does Locke's problem still trouble empiricism despite these innovations?

II

Although van Fraassen rejects such devices as Lockean Ideas—'the theoretical entities of an armchair psychology that cannot even

[22] *Essay,* IV.ii.14. Alternatively, we could read Locke's reply to the sceptic as meaning to suggest a pragmatic metaphysics in which the reality of an object for us is nothing more than its capacity to deliver pleasure and pain; however effective this may be against the sceptic it is not intrinsically very attractive as a metaphysical theory. I owe this point to Sergio Tenenbaum.

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rightfully claim to be scientific'[23]—and the causal conception of sensation, he agrees with Locke on the inadmissibility of substantive innate or *a priori* knowledge: according to van Fraassen we are *never* rationally compelled to go beyond the evidence that we receive in experience, equally, we need not accept explanations that 'postulate entities or characteristics of the world to which there is no empirical access.'[24] Once we have observed those parts of the world to which there is empirical access, van Fraassen claims, there are no rationally binding rules of inference compelling us to extend ourselves further; for example, we cannot be rationally obliged to believe in unobservably small particles on the grounds that the existence of these particles would provide a good explanation of the macroscopic phenomena we do observe.[25] The economy of van Fraassen's position is remarkable: he aims to explain the warrant of scientific claims *strictly* by appeal to their empirical adequacy, by their capacity to account for what is observable, without helping himself to any ampliative rules of inference, whether IBE (Inference to the Best Explanation) or *a priori* knowledge of any over-arching natural principles (like the uniformity of nature).

This is not to say we are rationally forbidden to believe in unobservables like electrons. Van Fraassen advances what he calls a permissive conception of rationality, according to which you do not need to be rationally compelled to believe that p in order for your belief that p to count as rational; rather, you may believe that p as long as you are not rationally compelled to believe its contrary.[26] In his catchy phrase, 'rationality is but bridled irrationality'; it should be added that epistemology will supply very few bridles to restrain us, lest we violate the empiricist principle of keeping all of our

[23] Bas van Fraassen, *The Scientific Image* (New York: Oxford University Press, 1980), 72. His stated target here is in fact 'such events as experiences, and such entities as sense-data, when they are not already understood in the framework of observable phenomena ordinarily recognized'; whether the Lockean Idea should fall under this heading is perhaps a matter for discussion, but it seems that it should, to the extent that Locke wishes us to see the Ideas as epistemically prior to the observable phenomena.

[24] Bas van Fraassen, 'Against Naturalized Epistemology', in *On Quine: New Essays*, Paolo Leonardi and Marco Santambrogio, (eds) (Cambridge University Press, 1995).

[25] *Scientific Image*, 72–3.

[26] Bas van Fraassen, *Laws and Symmetry* (New York: Oxford University Press, 1989, 172, 'Against Naturalized Epistemology', 71, and p. 248 of van Fraassen's 'Empiricism in Philosophy of Science', in *Images of Science: Essays on Realism and Empiricism*, P. M. Churchland and C. A. Hooker, (eds), (University of Chicago Press, 1985).

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opinions open to revision in light of future experience.[27] Although we are never rationally compelled to believe in the existence of unobservable entities, and may always choose simply to accept a theory as empirically adequate—that 'what the theory says *about what is observable* (by us) is true'[28]—it is not irrational to go beyond mere acceptance and *believe* the theory or endorse the further claim that it is true even in what it says about unobservables. We may for pragmatic reasons choose to become believers—perhaps we shall be inspired to spend longer hours at the lab if we have the strong belief that electrons really exist, rather than the more conservative acceptance that all observable phenomena are as if they did—but we must not confuse these pragmatic considerations with the properly epistemic ones. Rational men may believe in things unseen, but those who are most self-conscious about the warrant for their beliefs, the true empiricists, will be conscious of the distinction between pragmatic and properly epistemic criteria, and will properly choose to 'withhold belief in anything that goes beyond the actual, observable phenomena.'[29] As with Locke, however, our question for van Fraassen is not about what happens after we are aware of the actual phenomena or in possession of the deliverances of experience, but rather about what (if anything) we must know to gain knowledge from experience in the first place, or how we come to believe in the actual phenomena as opposed to the products of imagination or illusion. Van Fraassen's thoughts on this topic are distributed over a number of textual passages.

Having identified empiricism as 'the epistemological thesis that experience is the sole legitimate source of information about the world,'[30] van Fraassen acknowledges the importance of distinguishing experience from other modes of thought:

> If I feel propositions 'welling up' in myself it is important to classify them as deliverances of experience or of other sources/processes. But how? Certainly they are not distinguished by being caused by what happens to us, for so are many of their rivals such as dreams, hunches, as so forth. Nor are they what is

[27] Van Fraassen claims to be 'not too sure' of exactly what all the bridles are, but is willing to commit that they must at least include logic and basic probability theory, and he excludes from the list of rational compulsions all ampliative rules such as IBE. (see 'Empiricism and the Philosophy of Science', 247–8, *Laws and Symmetry,* ch. 7) Elsewhere he adds consistency with our 'observed facts' to the list of 'rock-bottom criteria.' (*Scientific Image,* 94)

[28] *Scientific Image*, 18.

[29] *Scientific Image,* 202–3.

[30] 'Empiricism in the Philosophy of Science', 286.

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caused solely by what happens to us, since our present constitution also plays a role in that.[31]

The problem of how we classify thoughts as experiences is not easily solved; van Fraassen goes on to say here that he has not worked out any clear solution for it. In the continuation of this passage, he writes that it seems 'we must rely either on the concept of cause or else on metaphors, although neither is satisfactory.'[32] He takes the concept of objective causation to be inadmissible from an empiricist standpoint,[33] and argues that the metaphors we often use in epistemology—'reality is the *source* of experience', etc.—do little explanatory work. However far we are from having a clear account of experience, though, van Fraassen agrees that our capacity to recognize it is constantly called upon in scientific practice: 'The laboratory assistant, for example, is required to record what he sees and hears, not what he fantasizes or guesses.'[34] Of course we do not expect any theory to solve all possible epistemological problems at its inception, but this problem turns out to be a particularly difficult one for van Fraassen's theory. If there are no known standards for sorting out experience then the theory slides in the direction of a sceptical phenomenalism; on the other hand, if there are such standards then we encounter a question about how they could be known, and even in van Fraassen's own work we encounter an indirect suggestion that they would need to be known *a priori*.

Van Fraassen claims not to have a full account of experience that is satisfactory from an empiricist standpoint, but he does say enough to give us a clear sense of the basic character of his empiricism. We begin with a crude conception of experience—'the revelation model'—in which we have 'a man in a glass booth with a ticker tape that prints out statements which he treats as divine revelation.'[35] One way in which this picture must be modified, according to van Fraassen, is that it wrongly suggests that experience simply

[31] 'Against Naturalized Epistemology', 69–70.

[32] 'Against Naturalized Epistemology', 70.

[33] The idea of causation can serve only as a placemarker for a gap in a partial model of how things are; any fully satisfactory scientific theory would eliminate reference to such notions. Consequently, as he puts it in *Laws and Symmetry,* 'causal and modal discourse describes features of our models, not features of the world.' (p. 214)

[34] 'Against Naturalized Epistemology', 77. See also '*Sola Experientia*? Feyerabend's Refutation of Classical Empiricism', *Philosophy of Science* **64**, No. 4 (1997 supplemental volume), 385–395, especially 388, where the problem of sorting real from merely apparent experience is once again identified as a potential difficulty for empiricism.

[35] 'Empiricism and the Philosophy of Science', 250.

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delivers us a list of true propositions. It is not that experience gives us a list of propositions with mixed truth values, van Fraassen claims; rather, 'it is impossible to find propositions that experience 'gives' one as evidence' at all.[36] This point is made in the context of drawing a distinction between experiences themselves and reports of experiences; only the latter are propositional and therefore fit to serve as evidence. To clarify the relationship between experience itself and our reports of it, van Fraassen offers the following remarks:

> As soon as I try to describe my experience ('I just saw a flying saucer'), even if only to myself, I am formulating a new belief *in response to* my experience. At this point one may be tempted to introduce a theoretical description of a process that determines this response. Let us leave that to scientists and not be our own armchair psychologists.[37]

Although this passage includes a declaration that no account of the relationship between experiences and our descriptions of them will be supplied, it is not because this relationship is seen as unknowable; indeed, van Fraassen accepts as legitimate the project of searching for 'a process that determines' the reports we give of our experience, but urges that this project is best left to scientists. The implications of assigning this task to science will be considered shortly. But we should first reconsider van Fraassen's earlier claim that 'it is impossible to find propositions that experience 'gives' one as evidence.' If we maintain that there is a psychological process determining which propositions we will utter when faced with an experience, then it might seem strange to insist that experience does not give us propositions. Broadening our understanding of 'experience' to include this process of response-determination, it seems that experience, with this process tacked on, does give us propositions as evidence after all: we are back to something like the ticker-tape model, in which experience reports are cranked out automatically. But van Fraassen is careful to distinguish producing an experience report from getting a proposition from experience as evidence.

We can start to appreciate this difference by examining the possibility of revising our reports:

> The correct characterization of taking-as-evidence and its near relatives is this: I *accept a constraint* on my posterior opinions. This constraint I attempt to satisfy, and a critique is possible of

[36] 'Empiricism and the Philosophy of Science', 251.
[37] 'Empiricism and the Philosophy of Science', 251.

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> how and whether I satisfied it in realizing my opinions. The acceptance of the constraint is itself also subject to critique, first of all by others ('*I* don't believe that you saw a flying saucer') and later by myself ('I now believe that I made a mistake, though at the time it seemed as clear as day').[38]

Unlike the statements in the 'ticker-tape revelation' model of experience, experience reports, on this account, may be questioned. In taking an experience report as evidence of how things are in the world we are not taking an irrevocable step; we are supposed to bring our opinions into line with what we take as evidence, but we are also able to change our minds about whether a given experience report works as evidence in the first place. This already marks a clear advance over Locke's conception of sensation, in which the difference between modes of thought was supposed to be manifest, leaving no clear way to revisit past moments of what had seemed to be sensation and take a new attitude to their contents. And if the endorsement of a judgment as an experience report is 'subject to critique', then van Fraassen's decision to assign to scientists the task of coming up with a description of how we produce experience reports in response to experience does not make him an epistemological naturalist: to say that psychology can track how human beings actually respond to experience is not (or not yet) to say that psychology can track how it would be rational to respond, or what we should be accepting as our basic empirical evidence.[39]

Having made our endorsement of a report as an experience report subject to critique, it is natural to wonder what the grounds of that critique might be. It seems that there are various ways in which one could criticize a candidate experience, many of which would be relatively unproblematic for van Fraassen's theory. We may occasionally throw out a candidate observation report on the grounds that its content conflicts with a theory already well-established on empirical grounds, perhaps judging that in this case the chance that we have hallucinated is greater than the chance that the theory is wrong; a flood of such candidates would surely give us reason to reassess the theory. We might also throw out a candidate observation report not because its actual content conflicts with any theory, but because to endorse it as an experience report would con-

[38] 'Empiricism and the Philosophy of Science', 251.

[39] A naturalist could grant that we are fallible in our endorsements of experience reports, and then try to offer a psychological theory of rationality to show how we criticize these endorsements (perhaps some idealization could be added to take into account that our criticism is also fallible); van Fraassen's own hostility to naturalism will be discussed below.

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flict with some empirically well-established theory about the limits of human observation (thus ruling out purported sightings of exceedingly small or distant objects, etc.). Here again, we might on empirical grounds come instead to revise our theories of visual acuity, and so on: our commitments to our theories about observation do not need to be *a priori* for us to use them as (provisional) filters on which reports we will take as legitimate. As long as the decision whether to count something as an experience report rests on nothing more than what various other experience reports have told us, we have not compromised our empiricism.

What would be more of a problem for van Fraassen's empiricism would be a need for something more than such empirically revisable standards to guide us in the acceptance of certain reports and not others as deliverances of experience. Are there any substantive *necessary* conditions that experiences must meet, any rules of experience that are not themselves learned from experience? We already have the hint that in order for something to count as an experience it may have to be of something intersubjectively accessible (to the extent that our acceptance of the constraint is 'subject to critique by others'): if I see a bright pink flash in the sky where no one else does, then I have reason to doubt that I really had an experience, as opposed to an episode of eye trouble. If there is nothing in the immediate character of my consciousness to settle the question (and van Fraassen says we can be mistaken even about those moments which 'at the time seemed as clear as day'), then I must turn to others or rely on something other than what I am presently conscious of (say, my own prior beliefs). Experience is not simply a matter of self-certifying private conviction; its objects (unlike dream-objects) are public,[40] accessible to others and to myself at different moments in time—that is, they are lasting and regular in a way that makes it reasonable to take my past beliefs or the beliefs of others into account when attempting to assess the status of a present moment of consciousness. What is more, this fact about the objects of experience doesn't seem to be a contingent and empirically discoverable one, when we look at

[40] Or perhaps we should say 'outer experience': some qualification should be added about one's experience of inner events like headaches. (Although even here it makes sense to seek 'public' access to the phenomenon through CAT scans and the like.) I do not think that we have dropped into triviality by saying that outer experience must be of the intersubjectively accessible: one could hold a pure private conviction theory of experience, perhaps coupled with a theology guaranteeing one's private convictions, without insisting that others need be able to experience the same objects (indeed one could imagine a strangely varied community in which different members had epistemic access to different ranges of objects).

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the way we use it in filtering out experiences from other products of the mind. We can imagine experiences whose content could lead us to overturn other filters (say, about perceptual acuity); but what kind of content could reasonably lead me to believe I was experiencing a momentary private object, as opposed to having a hallucination?[41]

From this point, realists are often willing to move towards a substantially stronger *a priori* characterization of the objects of perception; what sets genuine observables apart from, say, mere dream objects or figments of our imagination, is that observable objects are lasting things with causal powers, subject to natural laws, perhaps grounding our perceptions of them through their primary qualities.[42] Van Fraassen does not at first appear willing to move in that direction; he rejects the idea that anything like causal powers or laws could lie 'behind' the phenomena we observe,[43] and claims that 'the '-able' in 'observable' is no more than a reference to 'our physical and biological limitations as human beings.'[44] The realist can agree that what is observable is constrained by our contingent biological limitations, but add that the modal '-able' in 'observable' also involves a tacit reference to causal powers or laws: for the realist, an observable thing is a thing whose causal powers are such as to support a lawful conditional 'if the circumstances were thus, it would be observed'. Discovering the precise character of an object's causal powers could be a subject for empirical investigation, on the realist's view, but it would not be an empirical matter whether or not an experienced object had causal powers at all; the realist takes it to be a necessary condition of our observing something that it have a causal impact upon us. We are rationally obliged to take real objects as having

[41] This swipe against private objects may seem hasty, especially when we consider that various epistemological theories have found us to be conscious of nothing else (sense data theories of a certain vintage, etc.). Further considerations about the publicity of objects of experience appear below in the discussion of van Fraassen's own hostility to sense data theories.

[42] See, for example, Gareth Evans's, 'Things without the mind', from *Philosophical Subjects: Essays Presented to P.F. Strawson*, Zak van Straaten, (ed.) (Oxford: Clarendon Press, 1980), rpt. in *Collected Papers* (Oxford University Press, 1985), 249–290.

[43] He advances this claim often, but most eloquently in 'The World of Empiricism', in *Physics and our View of the World*, Jan Hilgevoort, (ed.) (New York: Cambridge University Press, 1994), 114–134.

[44] *Scientific Image*, 17. See also 'Empiricism and the Philosophy of Science', 250: 'the deliverances of experience do fall within certain definite and strict limits, due to our factual finitude in several quantitative or qualitative respects'. Here also it seems that the range of what is observable is strictly a matter of *contingent* fact.

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causal powers, according to the realist; equally, we have *a priori* knowledge that real objects are like this, and call upon that knowledge in sorting out experience from mere dreaming or imagination.

This realist proposal posits knowledge of a kind an empiricist should be unwilling to admit, but van Fraassen is not entirely unsympathetic to the claim that we need resources beyond what experience itself delivers in order to sort out the deliverances of experience. In distinguishing what I have dreamed from what I have really experienced, van Fraassen writes,

> In practice I will certainly trust and rely upon my prior opinion and theoretical commitments. I will police my own data, and not accept any immediate, spontaneous, unreflective responses as ultimate authority. … But doing so, I can no longer pretend to empiricist foundationalism….'[45]

Empiricist foundationalism is presumably a position in which we do accept immediate, spontaneous, unreflective responses as ultimate authority; if we police our data we are not foundationalists. We are drawing on something more than immediate experience if we rely on prior opinion and theory to figure out what data are admissible, or what we are really experiencing. According to van Fraassen, we can make ourselves conscious of this commitment to prior opinion and theory above all by reflecting on 'the indispensable reliance on our understanding of our own language.'[46] We rely on experience, but our reports of experience are made in a language with various striking commitments, a language shaped by the dominant theoretical outlook of one's time and (perhaps to a lesser extent) by one's own prior beliefs. The realist will happily concede as much, but will then urge us to ask: what justifies this practice of ours? In taking prior opinion as a good guide to whether we have just now experienced or only imagined something, it seems we are assuming that the course of nature is continuing in a uniform manner. And here the realist can claim that this assumption is justifiable in virtue of the stable metaphysical characteristics of the reality we inhabit, characteristics of the world to which we have no empirical access. Does van Fraassen have a rival story about what could justify the way in which we police our data? Here we encounter something of a tension in his thought: in some places it is suggested that this is a question that should not arise at all, and elsewhere there are hints of an answer to it.

[45] '*Sola Experientia?*—Feyerabend's Refutation of Classical Empiricism', 389.

[46] '*Sola Experientia?*—Feyerabend's Refutation of Classical Empiricism', 390.

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There are times when van Fraassen seems opposed to the whole project of giving an epistemological assessment of beliefs (as opposed to changes of belief). At least as far as macroscopic objects are concerned, we have certain beliefs whose epistemic credentials need no scrutiny; epistemology may criticize the ways in which we theorize or revise our beliefs, but it cannot pass judgment on the warrant of what we take as basic evidence. 'It is possible to remain an empiricist without sliding into scepticism, exactly by rejecting the sceptics' pious demands for justification where none is to be had,'[47] van Fraassen claims. If we seek for such justification, say, in the manner of Bertrand Russell in the days of his sense-data theories, we are bound to be disappointed with the results: 'As [Russell's] colleagues on the Continent were beginning to say: *we are already outside in the external world!* The whole burden of rationality has shifted from justification of our opinion to the rationality of *change* of opinion.'[48] We are at liberty to ask for reasons why someone has gone beyond the observational results of their laboratory to endorse a theory about unobservable particles; we should not (on pain of generating some futile scepticism) ask about the epistemic credentials of the original observational evidence.

Now when van Fraassen and his defenders claim to be 'not interested in warrant,'[49] they do not mean to suggest that our basic evidence *lacks* warrant. As empiricists, we may have our doubts about the truth (as distinguished from the empirical adequacy) of the particle theories that scientists advance; we are not equally at liberty to doubt their observations. Wanting a real contrast between our proper epistemic attitude to observable and unobservable entities, van Fraassen says that 'we can and do see the truth about many [observable] things: ourselves, trees and animals, clouds and rivers—in the immediacy of experience.'[50] Commitment to the unobservable may be an optional matter to be decided on pragmatic grounds; not so commitment to observable things like trees (we are 'already out there' among them). But how exactly are we to understand this non-optional quality of experience? Here van Fraassen's reference to the immediacy of experience may remind us of the 'immediate responses' of the empiricist foundationalist or the immediately manifest experience of Locke; it may take some work to square this remark with

[47] *Laws and Symmetry*, 178.

[48] *Laws and Symmetry*, 171.

[49] This quotation comes from an article co-authored by van Fraassen, J. Ladyman, I. Douven and L. Horsten. ('A Defence of van Fraassen's Critique of Abductive Inference', *The Philosophical Quarterly*, **47**, No. 188, July, 1997), 315.

[50] *Laws and Symmetry*, 178.

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the idea that experience is always subject to review.[51] To the extent that van Fraassen also maintains that we are obliged to think critically about our experience to determine what evidence it has given us, relying in part on our own prior opinions and the criticism of others, then he is not taking experience to function as an unquestioned starting point in his epistemology. When we are lucky enough to see the truth about things in experience, this is not just a matter of our having been presented with a certain undeniable *content*. We can do some cognitive work to figure out whether or not we have experience in any particular case; we do not read the deliverances of experience off the ticker-tape. And there are passages in van Fraassen where we receive some hints about what further cognitive resources might be involved here, what kind of background is needed before we can see truths in the immediacy of experience (and here we get some hints of an answer to that question about policing our data). In particular, it is suggested that whatever we can gain from experience has to be understood in terms of a broader framework.

This framework comes to light in passages where Van Fraassen is responding to a criticism about the narrow limits he sets on rational compulsion, about the claim that there are no ampliative rules to take us beyond the deliverances of experience. It is sometimes objected that his arguments against ampliative reasoning would, if cogent, undermine not only belief in unobservables but equally belief in observable entities, or reduce van Fraassen's position to a phenomenalism of the present moment. Van Fraassen himself summarizes this objection against his position as follows:

> At this point, it may be objected that I have drawn an arbitrary line. Surely the observable objects and processes we recognize in our world, are also postulated entities, believed in because they best explain and systematize the sense-experience or series of sense-data which are at bottom the only real evidence we have? Should I not be as unwilling to postulate tables and trees as forces, fields, and Absolute Space, unless I have a rationale

[51] A parallel point can be made about the conclusion of 'Sola Experientia?': van Fraassen argues that the defining feature of empiricism is not that it accounts for knowledge on the basis of raw experience without interpretation (that would be impossible) but that it liberates us to criticize and possibly get rid of any element in our world view that 'can be identified as interpretive'. (393) Once we emphasize that experience itself is subject to review, or is already in some measure the product of interpretation, then it becomes less clear why empiricism should have any distinctive appeal for us.

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> that shows them to be essentially different in some relevant way?[52]

If this objection is right, then the contrast between observables and unobservables would be greatly diminished, and it is worth noting that the assimilation could happen in either direction. If we accept van Fraassen's arguments that the pragmatic virtues of explaining and systematizing don't make theories any more likely to be true, then according to the objection our commitment to observable entities should be as much a pragmatic matter as our commitment to 'forces, fields, and Absolute Space'. It may make us calmer and more satisfied if we can tell ourselves that our myriad sense data are best explained by postulating the existence of trees and tables, but (at least in our critically self-conscious moments) we should not consider that any reason to believe that they really exist. This way we should have no special epistemic qualms about our merely pragmatic reasons for believing in unobservables. Going the other way, if we *do* take ourselves to have good reason to believe in trees and tables, and if it is right that these beliefs are not supported just on the basis of our immediate sense data, then we cannot accept van Fraassen's narrow limits on rational compulsion; even before the question of electrons is raised, we are already rationally committed to beliefs going beyond our immediate sense-experience, so considerations of epistemic parsimony have no special force against unobservables. The rules that would admit electrons to our ontology are already in place when we think of trees.

Van Fraassen's position loses much of its interest if the line between observables and unobservables is blurred either way. So he replies quite forcefully:

> I mention this objection because I have heard it, but it astonishes me since philosophers spent the first five decades of this century refuting the presuppositions that lie behind it. ... But it is easy for me to add at least this: such events as experiences, and such entities as sense-data, when they are not already understood in the framework of observable phenomena ordinarily recognized, are theoretical entities. They are, what is worse, the theoretical entities of an armchair psychology that cannot even rightfully claim to be scientific. I wish merely to be agnostic about the existence of the unobservable aspects of the world described by science—but sense-data, I am sure, do not exist.[53]

Van Fraassen distances himself from empiricists such as Locke here

[52] *Scientific Image*, p. 72.
[53] *Scientific Image*, p. 72.

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in insisting upon the priority of 'the framework of observable phenomena, ordinarily recognized' over experiences or sense-data. In particular, we have here the implication that this framework of observable phenomena isn't constructed out of, or projected from some set of sense data of which we are first aware (as some phenomenalists would have it).[54] But note that the point is not just that sense-data or experiences make a poor starting point for the epistemologist who sets out to explain our cognition: van Fraassen is here responding to the objection that the ordinary knower is constructing his picture of the world out of raw experience. If the response is to meet the objection, the implication here is that the ordinary knower needs to have some grasp of 'the framework of observable phenomena ordinarily recognized' before he can sort out 'such events as experiences'. If our grasp of the framework is in place, then we have the resources to see the truth about trees and so forth 'in the immediacy of experience'; the truth about trees does not come to us through a stream of pure sense data taken on their own.

This passage gives us a way to answer a related criticism that has been pressed against van Fraassen by Stathis Psillos. Concerned with how van Fraassen could claim that his epistemology gives special priority to observable objects, as opposed to just those actually observed, Psillos writes:

> If anything, immediate experience is about observed things, not about unobserved but observable ones. When we posit unobserved but observable entities (e.g. when we claim that the present copy of *The Philosophical Quarterly* still exists when we go out of the library and cease to read it) we need to perform some kind of inference (rudimentary and unconscious though it may be) from what we immediately experience to an unobserved but observable thing that causes or sustains our immediate experiences (past and future).[55]

If van Fraassen gives us no rational bridge principles to take us

[54] A similarly anti-phenomenalist description of experience is given in the article written by van Fraassen with J. Ladyman, I. Douven and L. Horsten: 'Experience is, phenomenologically, experience of myself among and confronted by things and events—perhaps it cannot be otherwise, perhaps this form is a pre-condition for the very possibility of coherent experience.' ('Defence', 320.) Van Fraassen's co-authors note that the apparent metaphysics of common-sense realism might seem to raise 'serious problems for constructive empiricism'; however, they suggest that van Fraassen's opposition to sense-data and phenomenalism 'is not sufficient to establish the metaphysics of the world of common sense that ... most scientific realists want.' (Ibid.)

[55] Stathis Psillos, 'How not to defend Constructive Empiricism: a rejoinder', in *The Philosophical Quarterly*, **47**, No. 188 (July 1997), 371.

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beyond what is presently observed, Psillos charges, then his position collapses into Humean scepticism. But if we keep in mind van Fraassen's remarks about the priority of 'the framework of observable objects' over sense data or experiences, then we can see how immediate experience could in fact be about observable things rather than simply observed ones. Mere green and brown sense data, taken on their own, will not ground my judgments about a tree that continues to exist even when I am not enjoying such data; but if the same stimulation is received by a mind that already grasps 'the framework of observable phenomena as ordinarily recognized', then I can see the truth about a tree (an observable object with a lasting place in the framework) even in the immediacy of experience. In the case of the present moment, van Fraassen has already denied that we make an inference from our sense data to the thing that causes or sustains these sense data (or that we postulate tables or trees in the manner Russell suggested); the considerations he drew upon to make that move can equally be applied against the proposal that we need to make inferences from our present experience to establish the existence of a lasting observable (as opposed to a merely presently observed) object—the present experience is already about the lasting object.

But even if Psillos is wrong to suggest that, for van Fraassen, what we immediately experience is something less than a lasting observable object, he is pointing to a debt that needs payment. Van Fraassen seems to owe us an account of our grasp of the framework itself. If this is not a matter of simply amassing sense-data or experiences, then we have knowledge of a type that empiricism may be hard-pressed to explain. But before we turn to the question of how the framework is known, it is worth saying more about what it consists in. What is this larger context into which we need to place experience, the structure that is to save us from an incoherent phenomenalism of the present moment?

We receive some clues in van Fraassen's essay 'Against Naturalized Epistemology' which argues that our evidence is bounded by certain limitations which do not themselves have the status of empirical discoveries. One of these, which I call the temporal constraint, is elsewhere described as 'the most general limitation' on our experiential evidence: it says that 'experience discloses to us no more than what has *actually* happened to us so far.'[56] That might look like a *trivial* claim about experience, perhaps because even the crudest model of experience tends already to assume temporal organization—the reader of the ticker tape is given one true

[56] 'Empiricism and the Philosophy of Science', 253.

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statement at a time—but I shall try to show that it has a more interesting status. The posited connection between experience and actuality seems to have neither the status of a theory accepted on the basis of observations, nor the status of an observation in its own right. We do not start with a body of atemporal evidence and then find that we are rationally permitted to assign times to the various pieces.[57] Neither do we make the remarkable but contingent empirical discovery during every moment of experience that this experience happens to be of something observable and actual. But whatever kind of knowledge we have of the temporal structure of experience, this knowledge does in fact seem to have the role we should expect at this point, given what van Fraassen has said about the framework of experience: it is called upon in recognizing a mental episode as an experience at all. Part of what distinguishes experience from, say, memory or fantasy, is that we see it as putting us in touch with what is actually happening to us. 'Against Naturalized Epistemology' discusses this limit alongside another limit that the empiricist places on our evidence, the rule that experience is our *only* source of information about the world. I call this the uniqueness constraint.

The central argument of van Fraassen's 'Against Naturalized Epistemology' is that our acceptance of these basic empiricist constraints on our evidence cannot be based on what science tells us: empiricism itself is not the sort of doctrine for which we can seek empirical support. Starting with the uniqueness constraint, he takes up the question of whether scientific research could support the claim that experience is our only source of information. He does think we might be able to recast the hypothesis 'experience is our only source of information' into a precise enough form (by defining 'information,' etc.) that it would come to resemble the kinds of hypotheses that cognitive science really can test. However, the cognitive scientist would at best be able to show that, on the assumption that this hypothesis was correct within a certain restricted domain (the domain of his own present research), we would have some warrant to assert that the hypothesis was correct in general. The project of establishing this conditional, van Fraassen concludes, is 'not worth a grant', because it in no way brings us closer

[57] Van Fraassen sometimes makes remarks which might raise doubts about the claim that he takes the temporality of experience to be pre-theoretical. For example, he claims at one point that the theory of relativity itself 'forces us to locate observers in space-time.' (*Scientific Image*, 63) However, when we examine his arguments against naturalism, we will see that van Fraassen does not take the temporal constraint to be a *product* of scientific theory.

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to establishing the desired consequent.[58] The reason why we can get no further than the conditional, he thinks, is that acceptance of the hypothesis is partly constitutive of scientific practice. Science does not simply try to accommodate whatever candidate experience reports the scientist encounters; it is willing to take as evidence only those experience reports which seem endorsement-worthy, and the fact that a report is actually based on experience is a necessary condition of its being found worthy. Van Fraassen offers us a thought experiment as an illustration of this point.

Considering the question of whether science could determine that experience of objects is our only source of information about them, he imagines an experiment in which a person (Peter) is deprived of experience of objects for a period of time (say, placed in a sensory deprivation tank) and questioned in a way which (for the sake of argument) perfectly reveals his level of information before and after this period of isolation. What he says about the case is not that it is impossible for Peter to emerge from the tank with what seems to be more information, but that as a matter of fact we will not treat him as having gained information: we will not take his reports as evidence. Van Fraassen sees this thought experiment as having the following outcome:

> If we think that Peter gains new information…we should be willing to enter it as data—but of course we don't.
>
> Would the situation change if we found that in those cases which we can check directly, pronouncements made under those conditions are (almost always) true? I will stick my neck out and say *No*. We would count as data the reports of the daydreams experienced in the tank, and infer (relying on our past statistical generalizations) new beliefs about pterodactyls and the like. But we would never count the statements about the pterodactyls as data.
>
> The point is that what is honoured by the title of 'data' is in practice very carefully circumscribed.[59]

We can discern two central ideas here: (1) whether we accept a report as evidence depends not simply on its content, but on the circumstances of its production, and (2) as a matter of fact, we do happen to observe the empiricist constraints when we are doing science, or rationally sorting out which reports actually provide evidence. The first remark, about the experiment designed to test the uniqueness constraint, is particularly striking. According to van Fraassen we see that we 'should' write down what appears to be countervail-

[58] 'Against Naturalized Epistemology', 78.
[59] 'Against Naturalized Epistemology', 75, 75–6, 77.

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ing evidence, in the spirit of taking our test of the hypothesis seriously, but in fact we find that, as scientifically-minded experimenters, we do not do so: we won't really suspend the empiricist hypothesis, even when we are trying to test it. Consequently, we give up the idea that this hypothesis was open for testing in the first place. In the second remark, van Fraassen acknowledges that he is venturing out on a limb, but insists that even very successful apparent evidence against empiricism would not be treated as real evidence. It would not command the rational obligation which the empiricist reserves for his basic body of evidence about the observable; a judgment which is formed in violation of the basic rules of empiricist evidence is something that we should at most accept (rather than believe). To accept a report as evidence we must be aware not only of the content of the report—the pterodactyl reports could be perfectly well-formed, and even *true*—but also of the circumstances of its production. And we should note that this reasoning should apply to violations of the other constraints as well—if we take ourselves to be having immediate 'experience' of the future or far distant past (and van Fraassen may be meaning to suggest this kind of scenario, with his mention of prehistoric creatures), then we should not treat the judgments prompted by this 'experience' as offering real evidence; the empiricist considers it rational to rule such remarks out of bounds by the temporal constraint.[60] This should strengthen our suspicion that the constraint enjoys some kind of *a priori* status. However, the third remark seems to suggest a way van Fraassen might avoid the charge of apriorism. Perhaps his point is simply that, in practice, science follows strict rules about its evidence. Noting that scientists do in fact seem to have a manageable base of evidence to work with, and that this evidence has a certain character, the empiricist can infer, for example, that the uniqueness constraint (that only experience yields information) is in play.

This suggests one way the empiricist might attempt to avoid our charge of apriorism: perhaps he could argue that he is offering a purely descriptive account of scientific activity, a project which would leave him free to point out that this activity appears to be

[60] Van Fraassen doesn't explicitly draw attention to the fact that the temporal constraint is being assumed here, but note that the thought experiment does not have his desired outcome if we keep open the possibility that perhaps we can have experience or memory of the prehistoric past. We are not conducting an empirical investigation into the question of whether or not Peter is experiencing pterodactyls; we have to be assuming that he can't be experiencing the distant past in order to test the question of whether information comes only from experience.

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governed by certain rules without taking on the task of giving us an account of their status. As far as the uniqueness constraint is concerned, all the empiricist could say is that scientists exhibit untiring faith in the notion that knowledge comes only from experience. This understanding of empiricism makes the empiricist's project coherent enough, but not very attractive as an epistemology. The empiricist could describe science to some degree, but not tell us why it is preferable to tea-leaf reading (another activity which is no doubt constrained by various articles of blind faith).[61] And when we take into account something more than the uniqueness constraint—say, the temporal constraint as well—then we find still clearer reasons to reconsider the project of describing the principles guiding scientists without giving an account of their source or status. As we saw in the thought experiment, the temporal constraint does make a substantive difference to the set of judgments the scientist is willing to take as evidence; the scientist will have to throw out reports (even well-formed reports) that violate this constraint. If the empiricist still wants to adhere to his descriptive project, he can claim only that the growth of knowledge seems to proceed under the guidance of special principles for which he admits he can have no account. But once again, the empiricist who takes such a path can hardly continue to fault openly aprioristic theories for being mysterious.

It seems that van Fraassen owes us an account of these constraints. He is quite clear that science not only happens to restrict its evidence according to the basic constraints, but that it *must* do so to achieve its aims. The constraints are supposed to determine what we will take as our initial body of evidence; to the extent that we suspend these constraints (allowing ourselves to think that our daydreams are giving us information, that our experience might be of events in the distant past or future, etc.) then we no longer have a body of evidence on the basis of which we might make rational decisions about what to accept or reject. Van Fraassen is quite open about the odd status of the constraints: in his view, they are neither directly forced upon us as observations, nor accepted in the way in which empiricism tells us we may accept theories. And it does not seem obviously unreasonable to allow that our principles of rationality might themselves have a legitimacy which is quite distinct from the kind of legitimacy they confer on the judgments we make

[61] We might note also that van Fraassen's insistence on the separation of the pragmatic and the properly epistemic makes it hard for him to appeal to the success of science at this turn. There is no special extra success for the parts of science that have to do with the observable: theories that appeal to unobservable things are fabulously successful too.

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with their aid. So we can grant that van Fraassen could help himself to principles with this peculiar status. What he needs to show us, however, is exactly how his account of knowledge could still differ from the apriorist's. For it is not as though the apriorist thinks that we have *a priori* knowledge of the specific content of particular states of affairs; any reasonable apriorist takes our *a priori* knowledge to be of the same kind as the knowledge posited in van Fraassen's basic constraints.

Van Fraassen is more than willing to grant that the basic principles of empiricism must be seen rather differently from the claims which empiricism licenses us to believe. In fact, he argues that it would be *fatal* to empiricism to accept that 'to be an empiricist must consist in believing some statement about what the world is like.'[62] However, if empiricism is not a commitment to some belief, what is it? Van Fraassen claims that it is 'an attitude, or rather a cluster of attitudes, a philosophical stance.'[63] In virtue of its opposition to *a priori* metaphysical claims and the like, empiricism constitutes a stance that, when compared to other philosophical stances, enables us to engage in 'a more neutral, less belief-ridden inquiry into the facts to which we have access.'[64] There is something in this last remark that is puzzling: the mention of 'the facts to which we have access.' It is as though empiricism were a stance we took up only after we were in possession of a body of facts; but on van Fraassen's own account of the matter, in so far as we must use the empiricist constraints to distinguish our modes of thought, we must already take the empiricist stance in order to see ourselves as having access to any facts in the first place. Van Fraassen takes the unusual status of the basic constraints of empiricism to be a problem only from the reflective perspective of the epistemologist; he argues that acceptance of the empiricist constraints amounts to adopting a certain stance, and claims that 'the question is how any such stance is to manifest itself in the philosopher's philosophizing.'[65] But in saying this he seems to be missing the force of his own remarks on the extent to which the stance is manifested in our everyday judgments of empirical matters of fact, in our judgments, for example, to the effect that no one really gains knowledge of prehistoric creatures from soaking in isolation. When we accept the reports of others as factual, or when we make reports of our experience, we must take it to be the case that we are reporting on something observable and actual. This isn't a matter of taking a stance with respect to an exist-

[62] 'Against Naturalized Epistemology', 82.
[63] 'Against Naturalized Epistemology', 83.
[64] Ibid.
[65] Ibid.

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ing fact; it is a matter of figuring out whether something is a fact at all. The fundamental constraints make our judgments of particular matters of fact possible,[66] and, as van Fraassen has argued, this is not because science has established that the world is a certain way. Given that the constraints determine what we take as evidence, they seem to function as *a priori* limitations on our rational thought. Van Fraassen has yet to show us how he is doing anything other than quietly positing *a priori* knowledge.

In claiming that experience has a special epistemic status, the empiricist is not writing a blank check: there are some standards for what will count as experience. If these standards are not themselves learned from experience, but are a condition of it, so that everything we learn from experience must conform to them, then they are not a contingent feature of any empirical judgments. The standards are about what is necessary, in exactly the empiricist sense of 'necessary': they are independent of experience, and we could not have any experience that would overturn them. The idea that knowledge of necessity might be assumed in our acquisition of evidence, rather than being something to add to that body of empirical evidence, is something van Fraassen seems to overlook when he sets out to rid us of any belief in necessity in *Laws and Symmetry*. One place where this becomes quite clear is in a thought experiment about what he dubs 'the Hume world.' In this hypothetical world, everything appears normal, but there is no necessity behind these appearances. Van Fraassen writes:

> That Hume world is just like ours, all the same things happen in it, but it has no laws... So, there is no *occurrent* difference between the two worlds at all. There is no observational or experimental evidence anyone could gather, that would have any bearing on whether we are in that Hume world, or in our supposed original. Equivalently: no such evidence could bear at all on the question whether we don't really live in a Hume world already.[67]

The example presupposes that the gathering of experimental evidence doesn't itself require knowledge of necessity.[68] If it did, we

[66] Insofar as we are rational, of course. People may take themselves to be having epistemic access to past lives or possible worlds, but, if van Fraassen is right, they must be mistaken.

[67] *Laws and Symmetry*, 91.

[68] In this passage he speaks only of 'laws', rather than 'necessity' but the fundamental argument of *Laws and Symmetry* presents equal opposition to both notions, and on such similar grounds that I think it is fair to read van Fraassen as taking the Hume world example to weigh equally against objective necessity.

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would not have a contrast between two observationally indistinguishable worlds; the Hume world would not be observable at all, because to enter it would be to violate one of the conditions of observation. Of course van Fraassen himself is hardly an advocate of possible worlds.[69] But the value of this argument does depend on the acceptability of the conditional claim that *if* we could find ourselves in a Hume world, *then* we would still be able to observe things as we do here. But accepting this conditional will push the empiricist in the direction of scepticism.

How this would work in the case of Locke is quite straightforward. For Locke, sensation is causal: our ideas of sensation are 'the natural and regular productions' of things external to us. In a world without causation, there could be no real sensation. The difficulties that the Hume world example presents for van Fraassen himself are only superficially different. Again, if there is no necessity in the Hume world, it does not have to be the case that our experience reports are only of what is actual and observable. Van Fraassen is already willing to grant that Peter's reports about pterodactyls might happen to be *true*; what is alarming is that in the Hume world he would have no reason to claim that these reports were not *experience,* or equally deserving of a special epistemic status. In a world without necessity, the regularity we can trace between the true pterodactyl-reports and the long-past situations they match is just as good as the regularity we can trace between the scientist's true report in his laboratory and the presently visible state of his equipment. It is unclear whether we could attach any real meaning to the term 'experience' in the Hume world, let alone claim that it is our only source of information. Without the constraint of principles given the force of necessity, we do not have a well-defined body of evidence on which to base our subsequent claims. In the Hume world, choosing to follow the principles of van Fraassen's empiricism would be a completely arbitrary choice. We would have no grounds to posit a connection between the experience reports we might find ourselves making in such a world and the states of affairs actually occurring in it; we could not even claim that our reports were of what is observable and actual. To the extent that we relied on the structural constraints to figure out what is occurring in it, we would be operating under a delusion.

The empiricist maintains that we form a rational view of the world on the basis of experience; our task here has not been to demand a justification for this claim, but to show that it is a claim

[69] See his '"World" Is Not a Count Noun', *Noûs*, **29**, No. 2 (1995), 139–157, also *Laws and Symmetry*, 62–93.

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that is only possible on certain conditions. Sensations do not have unconditional epistemic value. As Locke correctly—if only implicitly—recognized, one condition for their having value for us is that we have some degree of *a priori* knowledge of the relationship between sensations and the things we sense. If the empiricist claims that what we need here should not be called *a priori* knowledge, but 'taking a stance', or 'having a natural disposition', we can now see that these substitutes are no less mysterious than *a priori* knowledge, and just as much of a violation of the parsimony that at first made empiricism so appealing.[70]

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