4
Anti-Luminosity

4.1 COGNITIVE HOMES

One source of resistance to the conception of knowing as a mental state is the idea that one is guaranteed epistemic access to one's current mental states. According to that idea, one must be in a position to know whether one is in a given mental state, at least when one is attending to the question. When one asks oneself whether one knows a given proposition, one is not always in a position to know the answer. Section 1.2 responded to the objection by arguing that many uncontentious examples of mental states are the same as knowing in this respect. Nevertheless, some are inclined to think that a central core of mental states must be different. If S belongs to that core, then whenever one attends to the question one is in a position to know whether one is in S. In that sense, knowing would not be a core mental state. This chapter argues that there is no central core of mental states in that special sense. That conclusion will be a corollary of a far more general result about the limits of knowledge.

There is a constant temptation in philosophy to postulate a realm of phenomena in which nothing is hidden from us. Descartes thought that one's own mind is such a realm. Wittgenstein enlarged the realm to everything that is of interest to philosophy.[1] That they explained this special feature in very different ways hardly needs to be said; what is remarkable is their agreement on our possession of a cognitive home in which everything lies open to our view. Much of our thinking—for example, in the physical sciences—must operate outside this home, in

[1] See Wittgenstein 1958: §126. Of course, Wittgenstein's 'we', unlike Descartes's, is collective. What is not hidden from each Cartesian subject is only its own thinking, not that of other Cartesian subjects. Wittgenstein is speaking of what is not hidden from any of us. The arguments below have not been, but could be, adjusted to the rejection in Wittgenstein 1969 of claims to know *p* when there is no question of doubting *p*; conversational inappropriateness is compatible with truth. When I feel cold with no question of doubt and I know that everyone else in the room feels cold, I usually know that everyone in the room feels cold. If so, I know that I feel cold.

alien circumstances. The claim is that not all our thinking could be like that.

To deny that something is hidden is not to assert that we are infallible about it. Mistakes are always possible. There is no limit to the conclusions into which we can be lured by fallacious reasoning and wishful thinking, charismatic gurus and cheap paperbacks. The point is that, in our cognitive home, such mistakes are always rectifiable. Similarly, we are not omniscient about our cognitive home. We may not know the answer to a question simply because the question has never occurred to us. Even if something is open to view, we may not have glanced in that direction. Again, the point is that such ignorance is always removable.

The aim of this chapter is to argue that we are cognitively homeless. Although much is in fact accessible to our knowledge, almost nothing is inherently accessible to it. However, it is first necessary to sharpen the issue, to make it more susceptible to argument.

4.2 LUMINOSITY

As in previous chapters, it is convenient to frame the discussion in terms of conditions, which obtain or fail to obtain in various cases. A case depends on a subject (referred to by 'one'), a time (referred to by the present tense), and a possible world. Although conditions are expressed by sentential clauses, they are not propositions as the latter are usually conceived, just because they are open with respect to person, place, and perhaps other circumstances, too. We often use clauses like that, as in 'When it rains, it pours'. The domain of cases will be taken to include counterfactual as well as actual possibilities. Since the cases on which the arguments below rely are physically and psychologically feasible, issues about the bounds of possibility are not pressing.

Conditions are coarsely individuated by the cases in which they obtain: they are identical if they obtain in exactly the same cases. This raises a delicate issue when we say that someone knows that a condition C obtains, for C may be presented in different guises. Under which guise is C known to obtain? If the condition that one is drinking water is the condition that one is drinking H_2O, because they obtain in the same cases, it does not seem to follow that one knows that the condition that one is drinking water obtains if and only if one knows that the condition that one is drinking H_2O obtains, for one may not know that water is H_2O. Fortunately, in a context in which the only relevant presentation of the condition C is as the condition that one is F, knowing that C obtains can be identified with knowing that the condition that one is F obtains, which is in turn only trivially different from knowing that one is F. We can therefore often leave the reference to guises tacit.

We will also use the notion of being in a position to know. To be in a position to know *p*, it is neither necessary to know *p* nor sufficient to be physically and psychologically capable of knowing *p*. No obstacle must block one's path to knowing *p*. If one is in a position to know *p*, and one has done what one is in a position to do to decide whether *p* is true, then one does know *p*. The fact is open to one's view, unhidden, even if one does not yet see it. Thus being in a position to know, like knowing and unlike being physically and psychologically capable of knowing, is factive: if one is in a position to know *p*, then *p* is true. Although the notion of being in a position to know is obviously somewhat vague and context-dependent, it is clear enough for present purposes. The vagueness and context-dependence are in any case primarily the result of fudging in attempts to defend the views to be criticized below.

A condition C is defined to be *luminous* if and only if (L) holds:

(L) For every case α, if in α C obtains, then in α one is in a position to know that C obtains.

Since being in a position to know is factive, the converse of (L) holds for any condition C, so the conditional in (L) could just as well be a biconditional. The picture is that a luminous condition always shines brightly enough to make its presence visible. However, (L) does not say that C must obtain independently of our dispositions to judge that C obtains; for all (L) says, the condition might obtain in virtue of those dispositions.

A realm in which nothing is hidden is a realm in which all conditions are luminous. Our question is: what conditions, if any, are in fact luminous?

Some examples will help. Pain is often conceived as a luminous condition, in the sense that if one is in pain, then one is in a position to know that one is in pain (for a recent discussion see McDowell 1989). The definition of luminosity gives scope to finesse some of the more obvious objections to claims of this kind. Thus people who lack the concept of pain—perhaps because their concepts carve up the space of possible sensations in an alternative way—and so never know that they are in pain, may still count as being in a position to know that they are in pain. Perhaps more primitive creatures are sometimes in pain without possessing any concepts at all; if they count as not even being in a position to know that they are in pain, a counterexample to luminosity might still be avoided by a stipulation that the subject of a case must be a possessor of concepts.

Two claims of luminosity are implicit in the following passage from Michael Dummett (1978: 131):

> It is an undeniable feature of the notion of meaning—obscure as that notion is—that meaning is *transparent* in the sense that, if someone attaches a meaning to each of two words, he must know whether these meanings are the same.[2]

Thus if two words have the same meaning for one, then one is in a position to know that they have the same meaning; if the words have different meanings for one, then one is in a position to know that they have different meanings. Dummett does not even make the qualification 'in a position to'; what of a subject who has never compared the two words? The two claims of luminosity are genuinely distinct, for the premise that whenever a condition C obtains one is in a position to know that C obtains does not entail the conclusion that whenever C does not obtain one is in a position to know that C does not obtain. If whenever one is awake one is in a position to know that one is awake, it does not follow that whenever one is not awake one is in a position to know that one is not awake (such asymmetries are discussed in Chapter 8). Strictly, of course, having the same meaning and having different meanings are contraries, not contradictories, since both require the words to be meaningful.

Other conditions for which luminosity is often claimed are those of the form: it appears to one that A. When there really is an oasis ahead, one may not be in a position to know that there really is an oasis ahead but, it is supposed, when there at least appears to one to be an oasis ahead, one must be in a position to know that there at least appears to one to be an oasis ahead.

4.3 AN ARGUMENT AGAINST LUMINOSITY

Consider the condition that one feels cold. It appears to have about as good a chance as any non-trivial condition of being luminous. Nevertheless, there is reason to think that it is not really luminous at all. This section presents the argument, and section 4.6 generalizes it. Sections 4.4 and 4.5 discuss objections.

Consider a morning on which one feels freezing cold at dawn, very slowly warms up, and feels hot by noon. One changes from feeling cold

² See also Dummett 1981: 632 and 1993: 4. For a recent discussion see Boghossian 1994.

to not feeling cold, and from being in a position to know that one feels cold to not being in a position to know that one feels cold. If the condition that one feels cold is luminous, these changes are exactly simultaneous. Suppose that one's feelings of heat and cold change so slowly during this process that one is not aware of any change in them over one millisecond. Suppose also that throughout the process one thoroughly considers how cold or hot one feels. One's confidence that one feels cold gradually decreases. One's initial answers to the question 'Do you feel cold?' are firmly positive; then hesitations and qualifications creep in, until one gives neutral answers such as 'It's hard to say'; then one begins to dissent, with gradually decreasing hesitations and qualifications; one's final answers are firmly negative.

Let $t_0, t_1, \ldots, t_n$ be a series of times at one millisecond intervals from dawn to noon. Let α_i be the case at t_i ($0 \leq i \leq n$). Consider a time t_i between t_0 and t_n, and suppose that at t_i one knows that one feels cold. Thus one is at least reasonably confident that one feels cold, for otherwise one would not know. Moreover, this confidence must be reliably based, for otherwise one would still not *know* that one feels cold. Now at t_{i+1} one is almost equally confident that one feels cold, by the description of the case. So if one does not feel cold at t_{i+1}, then one's confidence at t_i that one feels cold is not reliably based, for one's almost equal confidence on a similar basis a millisecond later that one felt cold is mistaken. In picturesque terms, that large proportion of one's confidence at t_i that one still has at t_{i+1} is misplaced. Even if one's confidence at t_i was just enough to count as belief, while one's confidence at t_{i+1} falls just short of belief, what constituted that belief at t_i was largely misplaced confidence; the belief fell short of knowledge. One's confidence at t_i was reliably based in the way required for knowledge only if one feels cold at t_{i+1}. In the terminology of cases, we have this conditional:

(1_i) If in α_i one knows that one feels cold, then in α_{i+1} one feels cold.

Note that (1_i) is merely a description of a stage in a specific process; it does not purport to be a general principle about feeling cold. Statement (1_i) is asserted for each i from 0 to $n-1$, which is not to say anything about cases other than $\alpha_0, \ldots, \alpha_n$.

Suppose that the condition that one feels cold is luminous. Then in any case in which one feels cold, the condition that one feels cold obtains, so one is in a position to know that the condition that one feels cold obtains, so one is in a position to know that one feels cold; since by hypothesis one is actively considering the matter, one therefore does know that one feels cold. We therefore have this conditional:

(2_i) If in α_i one feels cold, then in α_i one knows that one feels cold.

Now suppose:

(3_i) In α_i one feels cold.

By modus ponens, (2_i) and (3_i) yield this:

(4_i) In α_i one knows that one feels cold.

By modus ponens, (1_i) and (4_i) yield this:

(3_{i+1}) In α_{i+1} one feels cold.

The following is certainly true, for α_0 is at dawn, when one feels freezing cold:

(3_0) In α_0 one feels cold.

By repeating the argument from (3_i) to (3_{i+1}) n times, for ascending values of i from 0 to $n-1$, we reach this from (3_0):

(3_n) In α_n one feels cold.

But (3_n) is certainly false, for α_n is at noon, when one feels hot. Thus the premises $(1_0), \ldots, (1_{n-1}), (2_0), \ldots, (2_{n-1})$, and (3_0) entail a false conclusion. Consequently, not all of $(1_0), \ldots, (1_{n-1}), (2_0), \ldots, (2_{n-1})$, and (3_0) are true. But it has been argued that $(1_0), \ldots, (1_{n-1})$ and (3_0) are true. Thus not all of $(2_0), \ldots, (2_{n-1})$ are true. By construction of the example, one knows that one feels cold whenever one is in a position to know that one feels cold, so $(2_0), \ldots, (2_{n-1})$ are true if the condition that one feels cold is luminous. Consequently, that condition is not luminous. Feeling cold does not imply being in a position to know that one feels cold.

4.4 RELIABILITY

Since $(1_0), \ldots, (1_{n-1})$ are the key premises in the argument of the last section against luminosity, it is prudent to pause and reconsider the argument for (1_i).

The argument applies reliability considerations to degrees of confidence. These degrees should not be equated with subjective probabilities as measured by one's betting behaviour. For assigning a very high subjective probability to a false proposition does not by itself constitute any degree of unreliability at all, in the sense relevant to knowledge. Suppose that draws of a ball from a bag have been made. The draws are numbered from 0 to 100. You have not been told the results; your information is just that on each draw i, the bag contained i red balls and $100-i$ black balls. You reasonably assign a subjective probability of $i/100$ to the proposition that draw i was red (produced a red ball), and bet accordingly. You know that draw 100 was red, since the bag then contained only red balls, even if the proposition that draw 99 was red—to which you assign a subjective probability of 99/100—is false. That does not justify a charge of unreliability against you. Intuitively, for any i less than 100, your bets do not commit you to believing outright that draw i was red. Your outright belief may be just that the probability on your evidence that draw i was red is $i/100$, which is true. On draw 100, unlike the others, you can form the belief on non-probabilistic grounds that it was red. What incurs the charge of unreliability is believing a false proposition outright, not assigning it a high subjective probability.

What is the difference between believing p outright and assigning p a high subjective probability? Intuitively, one believes p outright when one is willing to use p as a premise in practical reasoning. Thus one may assign p a high subjective probability without believing p outright, if the corresponding premise in one's practical reasoning is just that p is highly probable on one's evidence, not p itself. Outright belief still comes in degrees, for one may be willing to use p as a premise in practical reasoning only when the stakes are sufficiently low. Nevertheless, one's degree of outright belief in p is not in general to be equated with one's subjective probability for p; one's subjective probability can vary while one's degree of outright belief remains zero. Since using p as a premise in practical reasoning is relying on p, we can think of one's degree of outright belief in p as the degree to which one relies on p. Outright belief in a false proposition makes for unreliability because it is reliance on a falsehood. The degrees of confidence mentioned in the argument for (1_i) should therefore be understood as degrees of outright belief.

The argument for (1_i) assumes that the underlying basis on which one believes that one feels cold changes at most slightly between t_i and t_{i+1}, for otherwise an error in the belief at t_{i+1} might not threaten the reliability of the belief at t_i. For example, if one believes inferentially at t_{i+1} and not at all inferentially at t_i, false belief at t_{i+1} might well be consistent with knowledge at t_i. Apparent gradualness in the process does not guarantee gradualness at the underlying level (Wright 1996: 937). Nevertheless, we can choose an example in which there is gradualness at the underlying level too, and that will suffice for a counterexample to (L). The basis on which one judges that one feels cold need not change suddenly as one gradually becomes colder.

The invocation of reliability does not presuppose that whether one numbered from 0 to 100. You have not been told the results; your information is just that on each draw *i*, the bag contained *i* red balls and 100−*i* black balls. You reasonably assign a subjective probability of *i*/100 to the proposition that draw *i* was red (produced a red ball), and bet accordingly. You know that draw 100 was red, since the bag then contained only red balls, even if the proposition that draw 99 was red—to which you assign a subjective probability of 99/100—is false. That does not justify a charge of unreliability against you. Intuitively, for any *i* less than 100, your bets do not commit you to believing outright that draw *i* was red. Your outright belief may be just that the probability on your evidence that draw *i* was red is *i*/100, which is true. On draw 100, unlike the others, you can form the belief on non-probabilistic grounds that it was red. What incurs the charge of unreliability is believing a false proposition outright, not assigning it a high subjective probability.

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The invocation of reliability does not presuppose that whether one feels cold is independent of one's dispositions to judge that one does. Luminosity is often supposed to rest on a constitutive connection between the obtaining of the condition and one's judging it to obtain, but the effect of such a connection would be to make reliability less contingent, not to make unreliability consistent with knowledge.

The concept of reliability is notoriously vague. If one believes p truly in a case α, in which other cases must one avoid false belief in order to count as reliable enough to know p in α? There is no obvious way to specify in independent terms which other cases are relevant. This is sometimes known as the *generality problem* for reliabilism. Some have argued that the generality problem is insoluble and that reliabilist theories in epistemology should therefore be abandoned (Conee and Feldman 1998). Let us concede for the sake of argument that the generality problem is indeed insoluble. It does not follow that appeals to reliability in epistemology should be abandoned. For the insolubility of the generality problem means that the concept of reliability cannot be defined in independent terms; it does not mean that the concept is incoherent. Most words express indefinable concepts; 'reliable' is not special in that respect. Irrespective of any relation to the concept *knows*, we clearly do have a workable concept *is reliable*; for example, historians sensibly ask which of their sources are reliable. The concept is certainly vague, but most words express vague concepts; 'reliable' is not special in that respect either. The concept *is reliable* need not be precise to be related to the concept *knows*; it need only be vague in ways that correspond to the vagueness in *knows*. No reason has emerged to doubt the intuitive claim that reliability is necessary for knowledge.

If one believes p truly in a case α, one must avoid false belief in other cases sufficiently similar to α in order to count as reliable enough to know p in α. The vagueness in 'sufficiently similar' matches the vagueness in 'reliable', and in 'know'. Since the account of knowledge developed in Chapter 1 implies that the reliability condition will not be a conjunct in a non-circular analysis of the concept *knows*, we need not even assume that we can specify the relevant degree and kind of similarity without using the concept *knows*. To suppose that reliability is necessary for knowledge is not to suppose that the concept *knows* can be analysed in terms of the concept *is reliable*, for it may be impossible to frame other necessary conditions without use of the concept *knows* whose conjunction with reliability is a necessary and sufficient condition for knowledge (see section 1.3).

We cannot expect always to apply a vague concept by appeal to rigorous rules. We need good judgement of particular cases. Indeed, even when we can appeal to rigorous rules, they only postpone the moment at which we must apply concepts in particular cases on the basis of good judgement. We cannot put it off indefinitely, on pain of never getting started. The argument for (1_i) appeals to such judgement. The intuitive idea is that if one believes outright to some degree that a condition C obtains, when in fact it does, and at a very slightly later time one believes outright on a very similar basis to a very slightly lower degree that C obtains, when in fact it does not, then one's earlier belief is not reliable enough to constitute knowledge. The earlier case is sufficiently similar to the later case. One's earlier reliance on C has too much in common with one's later reliance on it. The use of the concept *is reliable* here is a way of drawing attention to an aspect of the case relevant to the application of the concept *knows*, just as one might use the concept *is reliable* in arguing that a machine ill serves its purpose. The aim is not to establish a universal generalization but to construct a counterexample to one, the luminosity principle (L). As with counterexamples to proposed analyses of concepts, we are not required to derive our judgement as to whether the concept applies in a particular case from general principles.

Within the limits just explained, we can nevertheless see how a reliability condition on knowledge is consonant with the role of knowledge in the causal explanation of action, as described in sections 2.4 and 3.4. Knowledge is superior to mere true belief because, being more robust in the face of new evidence, it better facilitates action at a temporal distance. Other things being equal, given rational sensitivity to new evidence, present knowledge makes future true belief more likely than mere present true belief does. This is especially clear when the future belief is in a different proposition, that is, when the future belief can differ in truth-value from the present belief.

Some hunters see a deer disappear behind a rock. They believe truly that it is behind the rock. To complete their kill, they must maintain a true belief about the location of the deer for several minutes. But since it is logically possible for the deer to be behind the rock at one moment and not at another, their present-tensed belief may be true at one moment and false at another. By standard criteria of individuation, a proposition cannot change its truth-value; the sentence 'The deer is behind the rock' expresses different propositions at different times. In present terminology, it is logically possible for the unchanging condition that the deer is behind the rock to obtain at one moment and not at another. If the hunters know that the deer is behind the rock, they have the kind of sensitivity to its location that makes them more likely to have future true beliefs about its location than they are if they merely believe truly that it is behind the rock. If we are to explain why they later succeeded in killing the deer, given the foregoing situation, then it is more relevant that they know that the deer is behind the rock than that they believe truly that it is behind the rock.

The role of knowledge in the explanation of action exploits a kind of reliability. If at time t on basis b one knows p, and at a time t^* close enough to t on a basis b^* close enough to b one believes a proposition p^* close enough to p, then p^* should be true. The argument of section 4.3 allows us to pick t^*, b^*, and p^* arbitrarily close to t, b, and p respectively. We can make the time interval between t_i and t_{i+1} as short as we like. Since the relevant beliefs are in the obtaining of the same condition at those times, they will be correspondingly close. Since, as noted above, the beliefs can also be assumed to change in basis only gradually, their bases too will be correspondingly close. A well-chosen example will verify $(1_0), \ldots, (1_{n-1})$ and thereby provide the required counterexample to (L). A reliability condition on knowledge facilitates the role that knowledge does in fact play in the causal explanation of action. The appeal to such a condition does not depend only on brute intuition; it fits the independently motivated conception of knowing as a mental state.

4.5 SORITES ARGUMENTS

An obvious doubt arises about the argument of section 4.3. The reasoning is very reminiscent of that in sorites paradoxes. If with 0 hairs on one's head one is bald, and, for every natural number i, with i hairs on one's head one is bald only if with $i + 1$ hairs on one's head one is bald, then for any natural number n, however large, it follows that with n hairs on one's head one is bald. The reasoning may therefore be suspected of concealing a mistake just like the concealed mistake in sorites reasoning, whatever that is. Does the argument illicitly exploit the vagueness of 'feels cold' or 'know'?

The doubt can be made more specific. If the conclusion of the argument is false, then either not all the premises are true or the reasoning is invalid. Given $(1_0), \ldots, (1_{n-1})$ and the straightforwardly true (3_0) as auxiliary premises, the argument derives $(2_0), \ldots, (2_{n-1})$ from the supposed luminosity of the condition at issue and uncontested background assumptions, and then uses modus ponens to reach the straightforwardly false (3_n). By reductio ad absurdum, luminosity is rejected. On any reasonable view of vagueness, this reasoning shows that the luminosity claim is less than perfectly true, given that $(1_0), \ldots, (1_{n-1})$ are perfectly true.

On some accounts, the rule of modus ponens fails to preserve less than perfect truth, because it sometimes leads from almost perfectly true premises to a conclusion that is not even almost perfectly true. But modus ponens should still preserve perfect truth. Within degree-theoretic semantics, a pseudo-conditional can be defined for which a conditional statement is perfectly true if and only if its consequent is at worst slightly less true than its antecedent (Peacocke 1981: 127). For present purposes, however, we can legitimately stipulate that the conditional to be used in the argument is of the more conventional kind for which the conditional statement is perfectly true if and only if the consequent is at least as true as the antecedent.

On other accounts, the rule of reductio ad absurdum is problematic because an assumption can have perfectly false consequences without itself being perfectly false, and therefore without having a perfectly true negation. Nevertheless, an assumption with perfectly false consequences is still less than perfectly true. Moreover, it is arguable that vagueness requires no revision of classical logic at all.[3]

For the purposes of this chapter, it would suffice to argue that the luminosity claim is less than perfectly true, for then it will have perfectly false consequences, which should discourage its application to philosophy. Thus the way for the defender of (perfect) luminosity to use the connection with sorites paradoxes is by arguing that not all of (1_0), . . ., (1_{n-1}) are perfectly true, and using the vagueness of some relevant term to explain away their plausibility. Of course, the argument for (1_i) would remain to be addressed. Fortunately, however, the strategy can be tested more directly. For if (1_0), . . ., (1_{n-1}) are in effect the premises of a sorites paradox, then sharpening the relevantly vague expressions should make at least one of them clearly false, just as sharpening the term 'bald' by stipulating a cut-off point gives the conditional 'With i hairs on one's head one is bald only if with $i + 1$ hairs on one's head one is bald' a clearly false instance. Does the same happen here?

The relevantly vague expressions in (1_i) are 'feels cold' and 'knows'. We can sharpen 'feels cold' by using a physiological condition to resolve borderline cases. Let us assume that the subject of the process has no access to the technology needed to determine whether the physiological condition obtains, and so is not in a position to know whether it does. These stipulations in no way weaken the argument for (1_i). The considerations about reliability remain as cogent as before, for they were

[3] See Williamson 1994b on logic for vague languages. The arguments of the present chapter do not depend on the epistemic account of vagueness developed there, which requires no revision of classical logic.

based on our limited powers of discrimination amongst our own sensations, not on the vagueness of 'feels cold'. It might be objected that the sharpening violates the intended meaning of 'feels cold'. However, that would not undermine the contrast between (1_i) and the major premise of a sorites paradox. For *any* complete sharpening of 'bald' yields a clearly false instance of the principle 'With i hairs on one's head one is bald only if with $i + 1$ hairs on one's head one is bald', even if it violates the intended meaning of 'bald' by, for example, falsifying the converse downwards principle 'With $i + 1$ hairs on one's head one is bald only if with i hairs on one's head one is bald'. By definition, the sharpened term applies wherever the unsharpened term clearly applied and fails to apply wherever the unsharpened term clearly failed to apply; thus, on any sharpening, 'With 0 hairs on one's head one is bald' is true and 'With i hairs on one's head one is bald' is false for a suitably large number n, so for some number i the conditional 'With i hairs on one's head one is bald only if with $i + 1$ hairs on one's head one is bald' is false. Thus even the truth of (1_0), . . ., (1_{n-1}) on a sharpening of the vague terms that violates their intended meaning is enough to differentiate them from the premises of a sorites paradox.

The vague expression 'knows' remains. Sharpen it by tightening up its conditions of application: in the new sense it is not to apply in borderline cases for knowing in the old sense. It does not matter whether it applies in borderline cases of borderline cases for the old sense. If anything, this strengthens the argument for (1_i), by building more into its antecedent. It does not help one to know whether one feels cold. Indeed, one need not even be aware of the stipulation about 'know', for it is made by the theorist, not by the subject.

The stipulations will not make 'feels cold' and 'knows' perfectly precise; no feasible sharpening could do that. Fortunately, perfect precision is not necessary. We need only sharpen those expressions enough to resolve the finitely many borderline cases that actually arise in the argument. Such sharpening has the opposite effect to that predicted by the assimilation of the argument against luminosity to sorites reasoning; (1_i) becomes more not less plausible. The argument is not just another sorites paradox.

Nevertheless, the argument against luminosity might be thought to commit a subtler fallacy of vagueness. A defender of (2_i) might take the vagueness of its constituent terms to be essential to its truth, and explain the plausibility of (1_i) by assigning it a status short of perfect truth, while conceding that all of (1_0), . . ., (1_{n-1}) are true on some sharpenings, such as those considered above. The critic might take any sharpening that falsifies (2_i) to violate the intended meanings of the vague terms, on the grounds that those meanings make (2_i) analytic. On such a view, some unsharpened (1_i) would be almost but not quite perfectly true, because its consequent would be almost but not quite as true as its antecedent. The reliability conditions adduced in favour of (1_i) would be treated as almost but not quite perfectly correct. No justification has been provided for not treating them as perfectly correct, but let that pass. For the concession is in any case inadequate. The defender of (2_i) must reject the following variation on (1_i):

$(1P_i)$ If it is perfectly true that in α_i one knows that one feels cold, then it is perfectly true that in α_{i+1} one feels cold.

For if (2_i) is perfectly true, then the perfect truth of its antecedent implies the perfect truth of its consequent:

$(2P_i)$ If it is perfectly true that in α_i one feels cold, then it is perfectly true that in α_i one knows that one feels cold.

Statements $(1P_i)$ and $(2P_i)$ give an argument from the perfect truth of (3_i) to the perfect truth of (3_{i+1}), and therefore from the uncontested perfect truth of (3_0) to the perfect truth of (3_n); but the falsity of (3_n) is uncontested.

The critic will presumably treat $(1P_i)$ like (1_i), claiming that for some number i, it can be perfectly true that in α_i one knows that one feels cold, but slightly less than perfectly true that in α_{i+1} one feels cold. Can there be such an i? If it is less than perfectly true that in α_{i+1} one feels cold, then there is a strict standard by which it is false in α_{i+1} that one feels cold; so, by that standard, in α_{i+1} one is fairly confident of what is false, that one feels cold. If so, it is less than perfectly true that in α_i one knows that one feels cold, if the reliability considerations are to be assigned any positive weight at all. To put the argument more directly, if it is perfectly true that in α_i one knows that one feels cold, then it is perfectly true that one achieves the level of reliability necessary for knowing, and therefore perfectly true that in α_{i+1} one feels cold. Thus the objection to $(1P_i)$ fails, and $(1P_0), \ldots, (1P_{n+1})$ suffice for an argument that not all of $(2_0), \ldots, (2_{n-1})$ are perfectly true. Invoking degrees of truth will not protect claims of perfect luminosity.

The point is reinforced by the observation that, once the luminosity assumption is dropped, (3_n) does not follow in classical logic from $(1_0), \ldots, (1_{n-1})$ and (3_0). To see this, pick j and k such that $0 \leq j < k < n$; for each i, evaluate 'One feels cold' as true in α_i if and only if $i \leq k$, and otherwise as false; evaluate 'One knows that one feels cold' as true in α_i if and only if $i \leq j$, and otherwise as false. On this evaluation, (1_i) is always true, for if the antecedent is true, then $i \leq j < k$, so $i + 1 \leq k$, so the consequent is true. Statement (3_0) is true because $0 < k$. Statement (3_n) is false because $k < n$. We can extend this evaluation in the manner of the standard semantics for modal logic by treating cases like possible worlds and 'One knows that . . .' like 'It is necessary that . . .'. The foregoing evaluation results if one defines a case α_h to be accessible from a case α_i if and only if $|h-i| \leq k-j$, evaluates 'One knows that A' as true at a case α_i if and only if 'A' is true at all cases accessible from α_i, and evaluates 'one feels cold' as before. Since a classical evaluation makes (1_0), . . ., (1_{n-1}) and (3_0) true and (3_n) false, the latter does not follow from the former in classical logic. Contrast the sorites paradox: for any n, 'With n hairs on one's head one is bald' does follow in classical logic from 'With 0 hairs on one's head one is bald' and conditionals of the form 'With i hairs on one's head one is bald only if with i + 1 hairs on one's head one is bald'. Once luminosity is denied, conditionals of the form (1_i) generate no paradox.

Consistently with all this, we can postulate a more general phenomenon of which both vagueness and failures of luminosity independent of vagueness are special cases (Williamson 1994b and below). On such a view, the epistemological principles underlying (1_i) are important for vagueness too, but it does not follow that all their manifestations involve vagueness. Indeed, the epistemological principles by themselves imply no specific theory of vagueness.

4.6 GENERALIZATIONS

Section 4.3 argued that a specimen condition—that one feels cold—is not luminous. How far does the argument generalize?

The argument assumed nothing specific about the condition of feeling cold. It extends to the examples of supposedly luminous conditions mentioned in section 4.2. Since pain sometimes gradually subsides, for example, an argument against the luminosity of the condition that one is in pain can be modelled on the argument against the luminosity of the condition that one feels cold, without any structural revisions. It is not perfectly true that whenever one is in pain, one is in a position to know that one is in pain. That one is in pain does not imply that one is in a position to know that one is in pain. Similarly, two synonyms can gradually diverge in meaning, as a mere difference in tone grows into a difference in application. The structure of the argument against luminosity is just as before. That two words have the same meaning for one does not imply that one is in a position to know that they have the same

5
Margins and Iterations

5.1 KNOWING THAT ONE KNOWS

One can know something without being in a position to know that one knows it. We reached that conclusion using the form of argument developed in the previous chapter, for by a gradual process one can gain or lose knowledge. Similarly, one can know that one knows something without being in a position to know that one knows that one knows it, for by a gradual process one can gain or lose knowledge that one knows. This chapter explores such limits to our ability to iterate knowledge. They stem from our need of margins for error in much of our knowledge. Those limits make problems for common knowledge, in which everyone knows that everyone knows that everyone knows that . . .. Chapter 6 will apply the results to suggest a diagnosis of the paradox of the Surprise Examination and related puzzles.

We first consider in some detail a variant argument against the luminosity of the condition that one knows something. One can know without being in a position to know that one knows.

Looking out of his window, Mr Magoo can see a tree some distance off. He wonders how tall it is. Evidently, he cannot tell to the nearest inch just by looking. His eyesight and ability to judge heights are nothing like that good. Since he has no other source of relevant information at the time, he does not know how tall the tree is to the nearest inch. For no natural number i does he know that the tree is i inches tall, that is, more than $i-0.5$ and not more than $i+0.5$ inches tall. Nevertheless, by looking he has gained some knowledge. He knows that the tree is not 60 or 6,000 inches tall. In fact, the tree is 666 inches tall, but he does not know that. For all he knows, it is 665 or 667 inches tall. For many natural numbers i, he does not know that the tree is not i inches tall. More precisely, for many natural numbers i, he does not know the proposition expressed by the result of replacing 'i' in 'The tree is not i inches tall' by a numeral designating i. We are not concerned with knowledge of propositions expressed by sentences in which i is designated by a definite description, such as 'the height of the tree in inches', for he may not know which number fits the description.

To know that the tree is i inches tall, Mr Magoo would have to judge that it is i inches tall; but even if he so judges and in fact it is i inches tall, he is merely guessing; for all he knows it is really $i-1$ or $i+1$ inches tall. He does not know that it is not. Equally, if the tree is $i-1$ or $i+1$ inches tall, he does not know that it is not i inches tall. Anyone who can tell by looking that the tree is not i inches tall, when in fact it is $i+1$ inches tall, has much better eyesight and a much greater ability to judge heights than Mr Magoo has. These reflections do not depend on the value of i. For *no* natural number i is the tree $i+1$ inches tall while he knows that it is not i inches tall. In this story, Mr Magoo reflects on the limitations of his eyesight and ability to judge heights. Mr Magoo knows the facts just stated. Consequently, for each relevant natural number i:

(1_i) Mr Magoo knows that if the tree is $i+1$ inches tall, then he does not know that the tree is not i inches tall.

We could make the case for (1_i) even stronger by reducing the interval of an inch to something much smaller, perhaps a millionth of an inch, but that should not be necessary. To make the conditional 'If the tree is $i+1$ inches tall, then he does not know that it is not i inches tall' as uncontentious as possible, we can read 'if' as the truth-functional conditional, the weakest of all conditionals. In effect, it merely denies the conjunction 'The tree is $i+1$ inches tall and he knows that it is not i inches tall'.

Suppose, for a reductio ad absurdum, that the condition that one knows a proposition is luminous: if one knows it, then one is in a position to know that one knows it. We may also assume that, in the case at hand, for each proposition p pertinent to the argument, Mr Magoo has considered whether he knows p. Consequently, if he is in a position to know that he knows p, he does know that he knows p. Thus:

(KK) For any pertinent proposition p, if Mr Magoo knows p then he knows that he knows p.

Statement (KK) is a special case of the general 'KK' principle that if one knows something then one knows that one knows it, but sufficiently restricted to avoid many of the objections to the latter (for some of which see Sorensen 1988: 242). For example, (KK) does not imply by iteration that if p is pertinent then Mr Magoo has every finite number of iterations of knowledge of p, for it has not been granted that if p is pertinent then so too is the proposition that he knows p. The pertinent propositions are just those that occur in the argument below, which form a strictly limited set. Statement (KK) is also immune to the objection that a simple creature without the concept *knows* might still know, but would not know that it knew, for Mr Magoo has the concept *knows*.

We may legitimately assume that in the example Mr Magoo has been reflecting on the height of the tree and his knowledge of it so carefully that he has drawn all the pertinent conclusions about its height that follow deductively from what he knows; he has thereby come to know those conclusions. Let us consider a time at which that process is complete. We can therefore assume:

(C) If p and all members of the set X are pertinent propositions, p is a logical consequence of X, and Mr Magoo knows each member of X, then he knows p.

Of course, (C) is not justified by some general closure principle about knowledge. We often fail to know consequences of what we know, because we do not know that they are consequences. Statement (C) is simply a description of Mr Magoo's state once he has attained reflective equilibrium over the propositions at issue, by completing his deductions. Since Mr Magoo's deductive capacities do not fully enable him to overcome the limitations of his eyesight and ability to judge heights, and he knows that they do not, (1_i) remains true for all i.

By (KK), we can infer (3_i) from (2_i):

(2_i) Mr Magoo knows that the tree is not i inches tall.

(3_i) Mr Magoo knows that he knows that the tree is not i inches tall.

Now, let q be the proposition that the tree is i+1 inches tall. By (1_i), Mr Magoo knows $q \supset \sim(2_i)$; by (3_i), he knows (2_i). Now, $\sim q$ is a logical consequence of $q \supset \sim(2_i)$ and (2_i). Consequently, by (C), (1_i) and (3_i) imply that Mr Magoo knows $\sim q$:

(2_{i+1}) Mr Magoo knows that the tree is not i+1 inches tall.

Consequently, from (KK), (C) and (2_i) we can infer (2_{i+1}). By repeating the argument for values of i from 0 to 665, starting from (2_0) we reach the conclusion (2_{666}):

(2_0) Mr Magoo knows that the tree is not 0 inches tall.

(2_{666}) Mr Magoo knows that the tree is not 666 inches tall.

Statement (2_{666}) is false, for the tree is 666 inches tall and knowledge is factive. Thus, given the premises $(1_0), \ldots, (1_{665}), (2_0)$, (C), and (KK), we can deduce the false conclusion (2_{666}). Therefore, at least one of $(1_0), \ldots, (1_{665}), (2_0)$, (C), and (KK) is to be rejected. Premise (1_i) has already been defended for all i, and (2_0) is obviously true. Consequently, either (C) or (KK) is to be rejected.

Could we reject the assumption (C) that Mr Magoo's knowledge of the pertinent propositions is deductively closed? Assumption (C) is true if deduction is a way of extending one's knowledge: that is, if knowing $p_1, \ldots, p_n$, competently deducing q, and thereby coming to believe q is in general a way of coming to know q. Call that principle *intuitive closure*. Since by hypothesis Mr Magoo satisfies the conditions for the intuitive closure principle to apply, rejecting (C) is tantamount to rejecting intuitive closure. Robert Nozick's counterfactual analysis of knowledge is famously inconsistent with intuitive closure, but that is usually taken as a reason for rejecting the analysis, not for rejecting closure. Chapter 7 will provide arguments against counterfactual conditions on knowledge even of quite a weak kind; a fortiori they are arguments against Nozick's analysis.

A different objection occasionally made to intuitive closure is that even if one's premises are individually probable enough to count as known, one's conclusion might not be. For a logical consequence of several propositions may be less probable than each of them. If there are a million tickets in the lottery and only one wins, each proposition of the form 'Ticket i does not win' has a probability of 0.999999, yet the conjunction of all those propositions has a probability of 0. But that objection misconceives the relation between probability and knowledge; however unlikely one's ticket was to win the lottery, one did not know that it would not win, even if it did not (see also section 11.2). No probability short of 1 turns true belief into knowledge. Chapter 10 provides a very different understanding of the connection between knowledge and probability; it does not threaten intuitive closure.

The appeal to probability is in any case unavailing, for the argument can be reworked so that (C) is applied only to single-premise inferences; if q is a logical consequence of p then q is at least as probable as p. For the considerations that supported (1_i) also support:

(4_0) Mr Magoo knows that (for all natural numbers m (if the tree is $m+1$ inches tall then he does not know that it is not m inches tall) and (the tree is not 0 inches tall)).

Parentheses have been inserted to clarify scope. Now suppose, for some given i:

(4_i) Mr Magoo knows that (for all natural numbers m (if the tree is $m+1$ inches tall then he does not know that it is not m inches tall) and (the tree is not i inches tall)).

By (KK) we have:

(5_i) Mr Magoo knows that he knows that (for all natural numbers m (if the tree is m+1 inches tall then he does not know that it is not m inches tall) and (the tree is not i inches tall)).

But Mr Magoo knows with certainty that if he knows a conjunction then the first conjunct is true and he knows the second. Thus:

(6_i) Mr Magoo knows that (for all natural numbers m (if the tree is m+1 inches tall then he does not know that it is not m inches tall) and (he knows that the tree is not i inches tall)).

But (C) for single-premise deductions applied to (6_i) gives:

(4_{i+1}) Mr Magoo knows that (for all natural numbers m (if the tree is m+1 inches tall then he does not know that it is not m inches tall) and (the tree is not i+1 inches tall)).

The inference from (4_i) to (4_{i+1}) is the required sorites step. If we iterate it for each i from 0 to 665, starting with (4_0), we reach:

(4_{666}) Mr Magoo knows that (for all natural numbers m (if the tree is m+1 inches tall then he does not know that it is not m inches tall) and (the tree is not 666 inches tall)).

Statement (4_{666}) is false, for the tree is 666 inches tall. Thus the problem does not depend on applying (C) to deductions with more than one premise.

We should in any case be very reluctant to reject intuitive closure, for it *is* intuitive. If we reject it, in what circumstances can we gain knowledge by deduction? Moreover, the closely related anti-luminosity argument in section 4.3 did not assume closure in any form, which suggests that it is not the crucial premise.

A different objection to the argument is that vagueness is somehow to blame. Section 4.5 discussed the same objection. Since the reasons for dismissing it are the same as before, they will not be repeated in detail here. The crucial point is that the premises of the argument are not justified by vagueness in 'know' but by limits on Mr Magoo's eyesight and his knowledge of them. In checking that (1_i) remains true when 'know' is sharpened, we must be careful because 'know' occurs twice in (1_i), which ascribes to Mr Magoo knowledge that he could express in the words 'If the tree is i+1 inches tall, then I do not know that the tree is not i inches tall'. But if we sharpen 'know' by stipulating a high standard for its application, we make that conditional harder to falsify and therefore easier to know, because the only occurrence of 'know' in the sentence is negative. Since (1_i) was clearly true prior to the sharpening, it therefore remains true afterwards; we may legitimately assume that Mr

Magoo has considered the sharpened sense of 'know'. That will not improve his eyesight. The argument does not rely on the vagueness of 'know'.

Given (C) and (KK) as auxiliary premises, there is a valid argument with otherwise true premises and a false conclusion. Premise (C) is accepted. Therefore, (KK) is to be rejected. Mr Magoo knows something pertinent without knowing that he knows it. Since (KK) follows from the assumption that the condition that one knows a proposition is luminous and background assumptions about Mr Magoo, the luminosity assumption is false. As in section 4.5, we can check that rejecting luminosity really does meet the difficulty by constructing a formal model of (C), (1_0), . . ., (1_i), . . ., (2_0) and the negation of (2_{666}) (Appendix 2 has more details).

Mr Magoo cannot identify the particular proposition for which (KK) fails. In general, one cannot knowingly identify a particular counterexample to the KK principle in the first person present tense. If I know that I both know *p* and do not know that I know *p*, I must know the first conjunct of that conjunction (since knowing a conjunction entails knowing its conjuncts), that is, I must know that I know *p*, so the second conjunct is false, so I do not know the conjunction after all (since knowledge is factive); Chapter 12 discusses this kind of argument in more depth. The point may help to explain the seductiveness of the KK principle.

The crucial features of the example are common to virtually all perceptual knowledge. Thus the argument generalizes to show that our knowledge is pervaded by failures of the KK principle. To the informed observer, hearing gives some knowledge about loudness in decibels, and touch about heat in degrees centigrade. When I smell the milk I have some knowledge of the number of minutes since it was opened; when I taste the tea I have some knowledge of how many grains of sugar were put in. The point generalizes to knowledge from sources beyond present perception, such as memory and testimony. This is partly because they pass on inexact knowledge originally derived from past perception, partly because they add further ignorance themselves. How long was my last walk in steps? How long was someone else's walk, described to me as 'quite long'? In each case the possible answers lie on a scale, which can be divided so finely that if a given answer is in fact correct, then one does not know that its neighbouring answers are not correct, and one can know that one's powers of discrimination have that limit. The argument then proceeds as in the case of the distant tree.[1]

[1] The argument of section 5.1 is similar in form to the argument used by Nathan Salmon (1982: 238–40, 1986, 1989) against the S4 principle $\Box p \supset \Box\Box p$ for metaphysical

8
Scepticism

8.1 PLAN

Rational thinkers respect their evidence. Properly understood, that is a platitude. But how can one respect one's evidence unless one knows what it is? So must not rational thinkers know what their evidence is? If so, then for rational subjects the condition that one has such-and-such evidence should be non-trivial yet luminous. But how can it be, given the anti-luminosity argument of section 4.3?

The assumption that rational thinkers know (or are in a position to know) what their evidence is has implications for sceptical arguments. Non-sceptics postulate a special asymmetry between the good and bad cases in a sceptical argument (section 8.2). Sceptics try to undermine the asymmetry by claiming that the subject has exactly the same evidence in the two cases, but this claim is not obvious (section 8.3). We can argue from the premise that rational thinkers know what their evidence is to the conclusion that their evidence is the same in the two cases (section 8.4). That conclusion forces one into a phenomenal conception of evidence (section 8.5). But the premise that rational thinkers know what their evidence is leads by a parallel argument to a clearly false conclusion (section 8.6). This is another variation on the arguments of sections 4.3 and 5.1. Rational thinkers are not always in a position to know what their evidence is; they are not always in a position to know what rationality requires of them (section 8.7). These conclusions generalize to sceptical arguments in which the sceptic does not claim sameness of evidence between the good and bad cases (section 8.8). One upshot is that sceptical arguments may go wrong by assuming too *much* knowledge; by sacrificing something in self-knowledge to the sceptic, we stand to gain far more in knowledge of the world.

8.2 SCEPTICISM AND THE NON-SYMMETRY OF EPISTEMIC ACCESSIBILITY

For simplicity, we can treat the sceptic as a generic figure, without attempting to track the protean variety of sceptical argument. Scepticism is a disease individuated by its symptoms (such as immoderate protestations of ignorance); we should therefore not assume that it can be caused in only one way. The present aim is to identify one main such way, not to eliminate the disease entirely.

For the sake of argument, let us assume that the constraints of the content externalism discussed in sections 2.2 and 3.2 are consistent with grasping the relevant propositions in sceptical scenarios. A recently envatted brain can still think about the external world. Even for such a brain, the assumption remains problematic as applied to propositions expressed by means of perceptual demonstratives (see also section 7.6). Suppose, for example, that I am looking at a cloud and think that that cloud is dark. A brain envatted before the advent of that cloud, with experience in some sense indistinguishable from mine, does not think that *that* cloud is dark, although it may think the words 'That cloud is dark' and be in no position to know that it does not thereby express a singular proposition concerning some cloud to the effect that it is dark. Similar issues arise for much less extravagant sceptical scenarios, involving mere hallucinations and the like. We assume for the sake of argument, perhaps over-generously, that the sceptic has some way of absorbing such implications of content externalism.

The sceptic compares a good case with a bad one. In the good case, things appear generally as they ordinarily do, and are that way; one believes some proposition p (for example, that one has hands), and p is true; by ordinary standards, one knows p. In the bad case, things still appear generally as they ordinarily do, but are some other way; one still believes p, but p is false; by any standards, one fails to know p, for only true propositions are known. As far as externalism permits, things appear to one in exactly the same way in the good and bad cases. The sceptic argues that because one believes p falsely in the bad case, one does not know p (even though p is true) in the good case. Let us postpone asking why the sceptic should think that false belief in one case precludes knowledge in the other, and consider the bad case.

Uncontroversially, if one is in the bad case then one does not know that one is not in the good case. Even if one pessimistically believes that one is not in the good case, one's true belief does not constitute knowledge; one has no reason to suppose that the appearances are misleading to that extent. More generally, it is consistent with everything one knows in the bad case that one is in the good case. For even if in the bad case one believes some true propositions which entail that (contrary to the appearances) one is not in the good case, those true beliefs do not all constitute knowledge. Part of the badness of the bad case is that one cannot know just how bad one's case is.

For the sceptic, the two cases are symmetrical: just as it is consistent with everything one knows in the bad case that one is in the good case, so it is consistent with everything one knows in the good case that one is in the bad case. One simply cannot tell which case one is in. For the sceptic's opponent, the two cases are not symmetrical: although it is consistent with everything one knows in the bad case that one is in the good case, it is not consistent with everything one knows in the good case that one is in the bad case. For in the good case, according to the sceptic's opponent, one knows p (for example, that one has hands), and also (by description of the bad case) that if one is in the bad case then p is false. These three propositions are jointly inconsistent:

(a) One is in the bad case.

(b) If one is in the bad case then p is false.

(c) p.

That argument does not assume that one knows that which is a logical consequence of what one knows, for the anti-sceptic's conclusion was merely that it is inconsistent with what one knows in the good case that one is in the bad case, not that one knows in the good case that one is not in the bad case. Although the anti-sceptic may hold that in the good case one also knows that one is not in the bad case, the asymmetry does not require that further knowledge claim.

We can state the asymmetry in the terminology of epistemic logic (see also section 10.4). A case β is said to be *epistemically accessible* from a case α if and only if everything which one knows in α is true in β. Then, according to the anti-sceptic, although the good case is epistemically accessible from the bad case, the bad case is not epistemically accessible from the good case.

Some refinements may be needed to handle the issues raised by the broad content of indexical expressions. As uttered in any case α, the sentence 'This case obtains' expresses a content true in α and in no other case. Perhaps one can know that content in α without knowing everything about α; we might allow cases other than α to be epistemically accessible from α, on the grounds that 'This case obtains' expresses (different) true contents in them. This complication does not affect the main arguments to come.

As is well known, asymmetries of epistemic accessibility yield counterexamples to the epistemic version of the 'Brouwersche' thesis in modal logic, the principle that if p is false then one knows that one does not know p ($\sim p \supset K{\sim}Kp$; 'K' for 'one knows that'), and consequently to the epistemic version of the S5 thesis, the principle that if one does not know p then one knows that one does not know p ($\sim Kp \supset K{\sim}Kp$).

The latter principle entails the former because knowledge is factive ($\mathrm{K}p \supset p$ holds). Like epistemic S4 (the KK principle), epistemic S5 embodies a luminosity claim. But the failure of the epistemic S5 principle on non-sceptical assumptions was already noted in section 1.2, independently of general anti-luminosity arguments. For in the bad case, p is false and one does not know p, but one does not know that one does not know p. If one knew in the bad case that one did not know p, then according to the sceptic's opponent it would not be consistent with everything one knew in the bad case that one was in the good case, since these three propositions are jointly inconsistent:

(d) One is in the good case.

(e) If one is in the good case then one knows p.

(f) One does not know p.

According to the sceptic's opponent, one can know (e) even in the bad case by description of the good case and one's appreciation that it meets the conditions for one to know p. The failure to know that one fails to know is characteristic of the bad case. Although the sceptic will try to argue that the postulated asymmetry between the two cases is ultimately unstable, there is at least no immediate incoherence.[1]

A common means of slurring over the epistemic asymmetry is to speak of the two cases as indiscriminable. Surely, if x is indiscriminable from y then y is indiscriminable from x. But even indiscriminability embodies a concealed asymmetry. For one may be able to discriminate between x and y when they are presented in one way and not when they are presented in another (Williamson 1990a: 14-20). A case can be presented in two relevant ways. When one is in a case, one can present it indexically to oneself, as 'my present case'. Alternatively, whether one is in a case or not, one can present it descriptively to oneself, for example, the good case as 'the good case' and the bad case as 'the bad case'. Since we have two cases and two modes of presentation of each of them, we have the four possibilities in Table 1 to consider.

Possibility II does not arise, because a case can be presented indexically as 'my present case' only if one is in it; since one cannot be in both the good and bad cases simultaneously, one cannot be faced with the task of discriminating between them, each presented indexically as 'my

[1] For epistemic asymmetry in relation to scepticism see Williams 1978: 310–13, although Williams is confident of an asymmetry only when death, drugs, sleep, or the like incapacitate the subject from thinking rationally. Humberstone 1988 has a subtle discussion of obstacles to asymmetry. For further sources of epistemic asymmetry, see section 10.4 and Appendix 5.

TABLE 1. *Presentation of Cases*

Possibility	Presentation of good case	Presentation of bad case
II	Indexical: 'my case'	Indexical: 'my case'
ID	Indexical: 'my case'	Descriptive: 'the bad case'
DI	Descriptive: 'the good case'	Indexical: 'my case'
DD	Descriptive: 'the good case'	Descriptive: 'the bad case'

present case'. DD discrimination is trivial, for one is merely required to discriminate conceptually between them presented as 'the good case' and 'the bad case', with no need to discover which case one is in. The interesting possibilities are ID and DI. Sceptics and anti-sceptics agree that in the bad case one cannot discriminate the bad case, presented indexically as 'my present case', from the good case, presented descriptively as 'the good case'. Thus it is uncontentious that the cases are DI indiscriminable. The issue is whether they are ID indiscriminable. Indiscriminability is symmetric in the sense that if x presented under mode M is indiscriminable from y presented under mode N, then y presented under mode N is indiscriminable from x presented under mode M, but it obviously does not follow that x presented under mode N is indiscriminable from y presented under mode M. DI indiscriminability does not imply ID indiscriminability. The anti-sceptic claims that in the good case one *can* discriminate the good case, presented indexically as 'my present case', from the bad case, presented descriptively as 'the bad case', for that is just to know in the good case that one is not in the bad case. The sceptic claims that one cannot make that discrimination, but since that is in effect to claim that in the good case one cannot know that one is not in the bad case, ID indiscriminability is tantamount to the sceptic's conclusion. The sceptic cannot use it as a premise without begging the question.

In a more complex version of the argument, the sceptic may postulate a subject whose case oscillates over time between the good case and the bad case. Such a subject may indeed be incapable of discriminating between the good case, presented indexically as 'my present case', and the bad case, presented indexically as 'my case five minutes ago', and therefore lack the relevant knowledge. It does not follow that one lacks that knowledge even if one's case is not in fact oscillating, or in danger of doing so. Thus the oscillation example does not achieve the sceptic's purpose. Alternatively, the sceptic may prefer to work with identity of appearance rather than with indiscriminability. The ultimate uselessness of such an appeal will emerge in the course of the argument below.

8.3 DIFFERENCE OF EVIDENCE IN GOOD AND BAD CASES

The sceptic typically insists that one has exactly the same evidence in the two cases. Therefore, since one believes *p* with that evidence in the bad case, believing *p* with the evidence one has in the good case is insufficient for the truth of *p*. If the sceptic allowed that one had different evidence in the two cases, false belief in the bad case would be a far less pressing threat to knowledge in the good case: the possibility of falsely believing *p* on the basis of bad evidence is quite compatible with the possibility of knowing *p* on the basis of good evidence. Scepticism about the external world has more intuitive force than scepticism about one's own sensations because we do not usually envisage beliefs about one's own sensations as based on evidence insufficient for their truth.

The sceptic cannot simply stipulate that one has the same evidence in the good and bad cases. For the notion of evidence will serve the sceptic's purposes only if it has non-trivial connections with other epistemic notions, such as the notion of knowledge. Some externalists about evidence (although not all) will argue that those connections force a difference in evidence between the two cases. If the sceptic tries to stipulate that the bad case is a case in which one falsely believes *p* while having the same evidence as one has in a case in which by externalist standards one knows *p*, those externalists will reply that, so defined, the bad case is impossible, and the sceptic's argument does not get off the ground. Rather, the sceptic should define the bad case in less contested terms, so that its possibility is agreed, and then *argue* for the lemma that one has the same evidence in it as in the good case. Many contemporary non-sceptics accept that lemma in the sceptic's overall argument. They concede that when we have empirical knowledge, we could have had false belief in the same proposition with exactly the same evidence. Many hold that, at least in some contexts, the bad case is in some sense irrelevant to the attribution of knowledge in the good case.[2] For present purposes, what matters is simply the claim that one has the same evidence in the two cases. How can that claim be supported?

A natural argument is by reductio ad absurdum. Suppose that one has different evidence in the two cases. Then one can deduce in the bad case that one is not in the good case, because one's evidence is not what

[2] Lewis 1996 gives a recent account of this kind in which sameness of evidence plays a central role. McDowell 1982 denies that the evidence is the same. For the relevant alternatives approach generally see Goldman 1976, Stine 1976, Dretske 1981b, and Cohen 1988.

it would be if one were in the good case. But even the sceptic's opponent agrees that it is consistent with everything one knows in the bad case that one is in the good case. Therefore, one has the same evidence in the two cases.

The argument assumes that in the bad case one knows what one's evidence is, otherwise one would lack a premise for the deduction. Now, surely one can be rational even in the bad case; misleading evidence sometimes makes false beliefs rational. So one can know what one's evidence is, granted the assumption that rational thinkers are in a position to know what their evidence is. The appeal of that assumption is by no means limited to sceptics; after all, it says that rational thinkers are in a position to know something. The idea, already mentioned, is that rationality requires one to respect one's evidence, which one cannot expect to do without knowing what it is.

8.4 AN ARGUMENT FOR SAMENESS OF EVIDENCE

Let us analyse the argument for sameness of evidence in detail. For simplicity, we may concentrate on cases in which one is rational, possesses all the relevant concepts, and is currently reflecting on one's evidence and its implications; one is epistemically active enough to know whatever one is in a position to know about one's evidence. If the sceptic can show that under these conditions one's evidence is the same in the two cases, the anti-sceptic would have little to gain by insisting that it is different when one is less epistemically active.

We start with the premise that one knows what one's evidence is. 'Evidence' here and throughout means one's total body of evidence. To know what one's evidence is in the relevant sense, one must do better than merely to think of it as 'my evidence'. To be in a position to respect one's evidence, one must identify its specific content in a more perspicuous and intrinsic way. One need not compress the identification into a single item of knowledge. The content can be specified by a class of appropriate properties, each of which one knows one's evidence to have under some canonical specification of the property. We assume on behalf of the sceptic that for each appropriate property a unique canonical specification is given. Let us concede for the sake of argument that such a notion of the canonical can be worked out in detail. We may also assume that if a property is appropriate, so is its complement. The first premise is therefore:

(1) For any appropriate property π, in any case in which one's evidence has π, one knows that one's evidence has π.

If we wanted to generalize (1) and the rest of the argument beyond cases in which one is rational, possesses all the relevant concepts, and is currently reflecting on one's evidence and its implications, we could replace 'knows' by 'is in a position to know'. One might wonder whether (1) generates an infinite regress, as Richard Fumerton (2000) has suggested. It does if being known to have π counts as an appropriate property whenever π does, but defenders of (1) should not concede that assumption. The appropriate properties are intrinsic to the content of one's evidence; being known to have such a property need not itself be intrinsic to the content of the evidence.

Whereas the first premise concerns first-personal knowledge of one's own case, the second concerns third-personal knowledge of one case from within another. For the argument to work, in the bad case one must know what one's evidence would be if one were in the good case, where the good case is presented descriptively. We can quite fairly assume that the terms 'the good case' and 'the bad case' abbreviate descriptions in which, for each appropriate property, if one's evidence in a case has an appropriate property then that is specified in the description of the case; likewise if one's evidence lacks an appropriate property. For the sceptic will insist that however much information one has about what would be so if one were in a given case, that still does not enable one to work out which case one is in. We may assume that one can refer to the appropriate properties, for that is already implicit in (1): if one's evidence has the appropriate property π, then one knows that it has π and so can refer to π; if it lacks π, then it has the appropriate complementary property not-π, so one knows that it has not-π, so one can refer to not-π, so one can refer to π. Thus one can attain trivial conceptual knowledge in the bad case about the appropriate properties of one's evidence in the good case simply by unpacking one's descriptive concept of 'the good case':

(2) For any appropriate property π, if in the good case one's evidence lacks π, then in the bad case one knows that in the good case one's evidence lacks π.

The third premise articulates the badness of one's predicament in the bad case. From premises each of which one knows in the bad case, one cannot deduce that one is not in the good case.

(3) It is consistent with what one knows in the bad case that one is in the good case.

Now restrict 'π' to appropriate properties and assume:

(4) In the bad case one's evidence has π.

Suppose further, as an assumption for reductio ad absurdum:

(5) In the good case one's evidence lacks π.

Premises (2) and (5) entail:

(6) In the bad case one knows that in the good case one's evidence lacks π.

Premises (1) and (4) entail:

(7) In the bad case one knows that one's evidence has π.

From 'In the good case one's evidence lacks π' and 'One's evidence has π' one can deduce 'One is not in the good case'. By (6) and (7), in the bad case one knows each premise of that deduction; hence:

(8) It is inconsistent with what one knows in the bad case that one is in the good case.

Now (8), which rests on assumptions (1), (2), (4), and (5), contradicts (3). Thus on assumptions (1)–(4) we can deny (5) by reductio ad absurdum:

(9) In the good case one's evidence has π.

We can conditionalize (9) on assumption (4):

(10) If in the bad case one's evidence has π, then in the good case one's evidence has π.

Here (10) rests on assumptions (1)–(3). Since the appropriate properties were assumed to be closed under complementation, we can run through the argument (1)–(10) with 'not-π' in place of 'π', yielding:

(11) If in the bad case one's evidence has not-π, then in the good case one's evidence has not-π.

Contraposition on (11) yields the converse of (10). Therefore, generalizing on 'π' in (10) and (11), we have:

(12) One's evidence in the good case has the same appropriate properties as one's evidence in the bad case.

The conclusion (12) rests on assumptions (1), (2), and (3). It may be restated as the claim that one's evidence is the same in the good and bad cases, where evidence is individuated by the appropriate properties. If something like this argument is not the reason for which sceptics and others think that one has the same evidence in the two cases, it is not at all clear what is.

8.5 THE PHENOMENAL CONCEPTION OF EVIDENCE

That one has the same evidence in the good and bad cases is a severe constraint on the nature of evidence. It is inconsistent with the view that evidence consists of true propositions like those standardly offered as evidence for scientific theories. For example, the good case in which I see that the dial reads 0.407 corresponds to a bad case in which the dial does not read 0.407 but I hallucinate and it is consistent with everything I know that the dial reads 0.407. Since the proposition that the dial read 0.407 is false in the bad case, it is not evidence in the bad case. If my evidence is the same in the two cases, then that the dial read 0.407 is not evidence in the good case either. For similar reasons, (12) does not permit my evidence to include perceptual states individuated in part by relations to the environment. No matter how favourable my epistemic circumstances, I am counted as having only as much evidence as I have in the corresponding sceptical scenarios, no matter how distant and bizarre. Retinal stimulations and brain states fare no better as evidence, for in some sceptical scenarios they are unknowably different too. Thus (12) drives evidence towards the purely phenomenal.

We should not assume ourselves to grasp the concept of the phenomenal quite independently of (12). Instead, the phenomenal may be postulated as comprising those conditions, whatever they are, which rational subjects can know themselves to be in whenever they are in them. Such conditions may be supposed to comprise conditions on present memory experience as well as on present perceptual experience (Lewis 1996: 553). That such conditions exist is supposedly guaranteed by the argument that rationality requires one to respect one's evidence and cannot require one to respect something unless one is in a position to know what it is.[3]

[3] Fumerton 2000 suggests an alternative conception of the phenomenal as that which supervenes on relations of direct acquaintance. Presumably, to be directly acquainted with something is to be acquainted with it but not by being acquainted with something else. But then we lack a sound argument to show that I cannot be directly acquainted with something in the good case—such as my hand—with which I am not directly acquainted in the bad case. Some of Fumerton's remarks also presuppose the equivalence of the notion of the phenomenal as what one is always in a position to know about with

The argument for (12) is not vulnerable to a distinction between relevant and irrelevant alternatives to the good case, for it in no way assumes the relevance of the bad case to the good case. It does not use the sceptical claim that it is consistent with what one knows in the good case that one is in the bad case; it uses only the uncontested claim (3) that it is consistent with what one knows in the bad case that one is in the good case. Although that may be to assume the relevance in some sense of the good case to the bad case, that assumption is uncontroversial, since the good case is the sort of case one believes oneself to be in and appears to oneself to be in if one is in the bad case. Even if in the good case one properly ignores the bad case, the argument to (12) still shows (given its premises) that one's evidence in the good case cannot exceed one's evidence in the bad case.

Does a distinction between relevant and irrelevant alternatives make trouble for the sceptic's further claim that false belief in the bad case precludes knowledge in the good case? Perhaps falsely believing p with given evidence in a case β precludes knowing p with the same evidence in a case α only if β is a relevant alternative to α in some sense of 'relevant' in which the bad case is not a relevant alternative to the good case. Although that is not the present issue, it is difficult not to feel sympathy for the sceptic here. If one's evidence is insufficient for the truth of one's belief, in the sense that one could falsely believe p with the very same total evidence, then one seems to know p in at best a stretched and weakened sense of 'know'. We might contrast it with a more robust sense in which one knows the evidence itself, if evidence can be conceived propositionally. But all these questions presuppose that one's evidence is indeed the same in the good and bad cases. How compelling is the argument for (12)? In particular, how compelling is the justification of its crucial premise (1)?

8.6 SAMENESS OF EVIDENCE AND THE SORITES

We can undermine the argument for (12), and in particular its crucial premise (1), by constructing a parallel argument from (1) to a clearly false conclusion. Whatever the nature of evidence, rational thinkers do not always know what their evidence is. The argument exploits ordin-

a notion of the phenomenal as what one is infallible about. These notions are not obviously equivalent. I could be in a position to know p while falsely believing $\sim p$, because my guru tells me $\sim p$. If one can have contradictory beliefs, I might even know p while deceiving myself into believing $\sim p$.

ary limits to one's powers of discrimination. It is an application of the anti-luminosity argument of section 4.3, with some modifications to clarify its relation to the argument presented in section 8.4. The argument shows that the condition that one's evidence has the appropriate property π is not luminous; it can obtain even when one is not in a position to know that it obtains.

Let $t_0, t_1, t_2, \ldots, t_n$ be a long sequence of times at one-millisecond intervals. Imagine that one's experience very gradually changes from t_0 to t_n; for example, one watches the sun slowly rise. One loses exact track of time. One's evidence at the beginning of the process (pitch darkness) is quite different from one's evidence at the end (bright daylight). Some of the appropriate properties of one's evidence are different; for purposes of this argument, it does not matter whether the appropriate properties exhaust the content of one's evidence. We may assume that the complement of an appropriate property is itself an appropriate property, although the purpose of the argument could be achieved without that assumption. For $0 \leq i \leq n$, let 'α_i' abbreviate a description of the case one is in at t_i; the description specifies the time t_i in clock terms and lists the appropriate properties which one's evidence then has and those which it then lacks. As with the sceptic's original argument, we may assume that one can refer to the appropriate properties, for that is implicit in (1). Thus one can attain trivial conceptual knowledge in one case about the appropriate properties of one's evidence in another case simply by unpacking one's descriptive concept of the latter case; in particular:

(2_i) For any appropriate property π, if in α_{i-1} one's evidence lacks π, then in α_i one knows that in α_{i-1} one's evidence lacks π.

The justification of (2_i) is just like the justification of (2) above.

Now consider the description of what is in fact the case one was in a millisecond ago. Given one's limited powers of discrimination, one does not know propositions from which one can deduce that that description does not apply to one's own case:

(3_i) It is consistent with what one knows in α_i that one is in α_{i-1}.

Since the purposes of this chapter require only one example in which (1) has false consequences, any readers lucky enough to have perfect discrimination amongst their own states should consider the less fortunate example of the present author, who is frequently in a predicament like (3_i). In such cases, (3_i) is obvious in roughly the way in which it is obvious that it is consistent with what I know by sight when I am in fact looking at a distant tree i millimetres high that I am looking at a tree only $i-1$ millimetres high. From premises which I know on the basis of sight to the conclusion that I am not looking at a tree only $i-1$ millimetres high, there is no hope of constructing a valid deduction, not even one which I am somehow not in a position to carry out. Similarly, from premises which I know in α_i to the conclusion that I am not in α_{i-1}, there is no hope of constructing a valid deduction, not even one which I am somehow not in a position to carry out.

The argument proceeds as before. Restrict 'π' to appropriate properties and assume:

(4_i) In α_i one's evidence has π.

Suppose further, as an assumption for reductio ad absurdum:

(5_i) In α_{i-1} one's evidence lacks π.

Premises (2_i) and (5_i) entail:

(6_i) In α_i one knows that in α_{i-1} one's evidence lacks π.

Premises (1) and (4_i) entail:

(7_i) In α_i one knows that one's evidence has π.

From 'In α_{i-1} one's evidence lacks π' and 'One's evidence has π' one can deduce 'One is not in α_{i-1}'. By (6_i) and (7_i), in α_i one knows each premise of that deduction; hence:

(8_i) It is inconsistent with what one knows in α_i that one is in α_{i-1}.

Now (8_i), which rests on assumptions (1), (2_i), (4_i), and (5_i), contradicts (3_i). Thus on assumptions (1) and (2_i)–(4_i) we can deny (5_i) by reductio ad absurdum:

(9_i) In α_{i-1} one's evidence has π.

We can conditionalize (9_i) on assumption (4_i):

(10_i) If in α_i one's evidence has π, then in α_{i-1} one's evidence has π.

Here (10_i) rests on assumptions (1), (2_i), and (3_i). Since the appropriate properties were assumed to be closed under complementation, we can run through the argument (1)–(10_i) with 'not-π' in place of 'π', yielding:

(11_i) If in α_i one's evidence has not-π, then in α_{i-1} one's evidence has not-π.

Contraposition on (11_i) yields the converse of (12_i). Thus, generalizing on 'π' in (10_i) and (11_i), we have:

(12_i) One's evidence in α_{i-1} has the same appropriate properties as one's evidence in α_i.

Proposition (12_i) rests on assumptions (1), (2_i), and (3_i). But the relation between the cases in (12_i) is transitive; if one's evidence in case β has the same appropriate properties as one's evidence in case γ and one's evidence in case γ has the same appropriate properties as one's evidence in case δ, then one's evidence in β has the same appropriate properties as one's evidence in δ, for what is in question is exact sameness in all properties from a fixed class. Although (3_i) claims only that α_{i-1} and α_i are indiscriminable, and indiscriminability is a non-transitive relation, we have deduced from it and the other premises the transitive relation of exact sameness of evidence in the appropriate respects. Thus $(12_1), \ldots, (12_n)$ together yield:

(13) One's evidence in α_0 has the same appropriate properties as one's evidence in α_n.

The conclusion (13) rests on assumptions (1), $(2_1), \ldots, (2_n), (3_1), \ldots, (3_n)$. But (13) is obviously false. One's evidence at the end of the process is grossly different from one's evidence at the beginning; it differs in many of its appropriate properties. Since $(2_1), \ldots, (2_n), (3_1), \ldots, (3_n)$ are true, for reasons already given, (1) is false.

Even if we drop the assumption that the complements of appropriate properties are themselves appropriate, we still have the argument to (10_i), and therefore by transitivity to the conclusion that if in α_n one's evidence has an appropriate property, then in α_0 one's evidence already had that property. That is obviously false, too. One does not always know the appropriate properties of one's evidence; one does not always know what one's evidence is.

To the objection that the argument is undermined by its obvious similarity to a sorites paradox, the reply is just as in section 4.5, and will not be repeated here. In brief, the argument in a sorites paradox has an obviously false premise when the vague terms at issue are sharpened; here that is not so.

Fumerton (2000) points out that the sorites argument would show that (1) can fail in a small way; it would not show that (1) can fail in a large way, as is held to occur in the bad case. However, one's evidence in the bad case can appear exactly similar to one's evidence in the good case, not because it is almost exactly similar, but because it is so radically impoverished that one lacks evidence of its impoverishment. Moreover, the usual reasons for claiming that one is always in a position to know exactly what one's evidence is do not naturally evolve into reasons for claiming that one is *always* in a position to know approximately what one's evidence is. We are *often* in a position to know approximately what our evidence is; that our position should occasionally be much worse than that, as in the bad case, is no surprise.[4]

8.7 THE NON-TRANSPARENCY OF RATIONALITY

The argument against (1) does not depend on any specific theory of evidence. The crucial assumption about evidence is just that its appropriate properties can vary between the endpoints of a spectrum of cases, as they must if we are to learn from experience. *Whatever* evidence is, one is not always in a position to know what one has of it. Thus nothing would be gained by a retreat to the fallback claim that one always knows (or is in a position to know) what one's evidence *appears* to be. For we can replace the words 'one's evidence has [lacks] π' in the preceding argument by 'one's evidence appears to have [lack] π'. Under this modification, (1) expresses the fallback claim, $(2_1), \ldots, (2_n)$ can be justified in the same way as before, $(3_1), \ldots, (3_n)$ are unchanged, and (13) remains hopelessly implausible, so the argument refutes the fallback claim, too. One does not always know what one's evidence appears to be.

If the phenomenal is postulated as comprising those conditions of the subject, whatever they are, which are accessible to the subject whenever they obtain, and therefore satisfy something like desideratum (1) for evidence, then the phenomenal is empty. We have the illusion of coming ever closer to a phenomenal core of experience by progressively eliminating every feature which can fail to be accessible to the subject, but, like the sequence of open intervals $(0,1)$, $(0,1/2)$, $(0,1/4)$, . . ., this sequence of approximations converges to the empty set.

We could modify (1) by relativizing appropriateness to cases. The modified variant of (1) would claim that, for any case α and any property π appropriate to α, if in α one's evidence has π, then one knows in α that one's evidence has π. We could then no longer argue to (13), because 'appropriate' in the modified (12_i) would have different relativizations for different values of *i*. But the argument for sameness of evidence in the good and bad cases would fail, for although we could

[4] Following Poincaré, Russell used the non-transitivity of indistinguishability in sensation to argue for imperceptible differences amongst our sense data (Russell 1993: 148, originally published in 1914). A. J. Ayer replied that the only notion of exact resemblance applicable to sense data is equivalent to the relation of apparent exact resemblance between material things, which can be non-transitive (1940: 132–4). That reply provides no basis for resistance to the arguments of this chapter.

show that one's evidence in the good case had the same properties appropriate to the *bad* case as one's evidence in the bad case, we could not show that one's evidence in the good case had the same properties appropriate to the *good* case as one's evidence in the bad case. Indeed, we could not show that one was always in a position to know which properties of evidence were appropriate to one's own case. The proposed relativization plays into the hands of the present strategy.

The problem remains: how can rational thinkers respect their evidence if they do not know what it is? If rationality requires one to respect one's evidence, then it is irrational not to respect one's evidence. But how can failing to respect one's evidence be irrational when one is not in a position to know that one is failing to respect one's evidence? More generally, how can ϕ-ing be irrational when one is not in a position to know that one is ϕ-ing?

The standard conception of rationality depends on a distinction between the *aims* and *methods* of cognitive activity. On that conception, truth is an aim. We cannot attain it directly; we cannot follow the rule 'Believe truly!' when we do not know what is true. Therefore we must use methods to reach the truth. Rationality is a method. We can follow rules of rationality because we are always in a position to know what they require. If the argument of section 8.6 is correct, this picture of rationality is mistaken. Just as one cannot always know what one's evidence is, so one cannot always know what rationality requires of one. Just like evidence, the requirements of rationality can differ between indiscriminable situations. Rationality may be a matter of doing the best one can with what one has, but one cannot always know what one has, or whether one has done the best one can with it. If something is a method only if one is always in a position to know whether one is complying with it, then there are no methods for learning from experience. But that standard is too exacting to be useful. We can use something as a method in contexts in which one is usually in a position to know whether one is complying with it, even if in other contexts one is not usually in a position to know whether one is complying with it. In that sense, we can use even believing truly as a method in contexts in which one is usually in a position to know what is true: for example, when forming beliefs in normal conditions about the spatial arrangement of medium-sized objects in one's immediate environment. In more difficult contexts, believing truly becomes an aim and we fall back on the method of believing rationally. Rationality becomes a sub-goal on the way to truth. That does not require one always to be in a position to know what rationality requires of one; it requires merely that one often knows what rationality requires when one does not know what truth requires. Nothing has been said here to undermine that requirement. In still more problematic contexts, paradoxes throw our very standards of rationality into doubt, and we fall back still further on what workable methods we can find. Cognition is irremediably opportunistic.

There is a pragmatist and subjective Bayesian project to operationalize epistemology by working only with concepts whose application is always accessible to the agent. The argument of this chapter implies that the project is doomed to failure.

Uncertainty about evidence does not generate an infinite regress of evidence about evidence about . . .. In order to reflect adequately on one's evidence, one might need evidence about one's evidence, and in order to reflect adequately about the latter evidence, one might need evidence about it, and so on. But this regress is merely and harmlessly potential. We cannot in fact realize infinitely many levels of adequate reflection; at best, further reflection enables us to realize finitely many further stages. At some stage one must rely on unreflective causal sensitivity to evidence (see section 9.3).

One can be causally sensitive to a factor without being in a position to have exact knowledge of it, as when one is causally sensitive through unaided perception to the distances between objects in one's environment. One can be causally sensitive to appropriate properties of one's evidence without being in a position to know them exactly. Causal sensitivity need not be perfect to be genuine. Sufficiently bad cognitive circumstances may involve obstacles even to causal sensitivity to one's evidence. The bad case in a sceptical argument may be a case in point. One's cognitive circumstances may be so bad that one is in no position to know how impoverished one's evidence is in comparison to the good case. Our causal insensitivity to any difference in evidence between the two cases does not show that there is no difference in evidence between them.

It has not been shown that the good and bad cases do differ in evidence. That requires a positive account of evidence, which Chapters 9 and 10 will develop. They defend the view that one's total evidence (not one's evidence for *p* alone) is simply one's total knowledge, on which the assumption that one has the same total evidence in the two cases is tantamount to the sceptic's conclusion. For since, uncontroversially, in the bad case one fails to know *p*, *p* would not be part of one's total evidence in the bad case, and would therefore not be part of one's total evidence in the good case either; so in the good case, too, one would not know *p*. A sceptic who assumes that one's total evidence is the same begs the question against a non-sceptic who takes that view of evidence. Of course, the argument of this chapter does not assume the equation of one's total evidence with one's total knowledge; rather, it lays the groundwork for the equation.[5]

For present purposes, what matters is that sameness of evidence has not been established, and a salient argument for it has turned out to rest on a false premise. For all that the sceptic has shown, one has more evidence in the good case than in the bad case, and knowledge in the former is unthreatened by false belief in the latter.

The problem is not confined to the sceptic. It also affects those non-sceptics who argue that in the good case we know *p* even though we falsely believe *p* in some cases in which we have the same evidence as in the good cases, because those bad cases are irrelevant (at least in this context). Such theorists have not eliminated the hypothesis that one knows *p* only if one does not falsely believe *p* on the same evidence in any case at all, relevant or irrelevant. That hypothesis does not entail scepticism.

Contextualists may argue that the extension of 'evidence' waxes and wanes with the context of utterance just as they suppose the extension of 'knowledge' to do. But then they cannot use 'the same evidence' as a fixed standard against which to measure contextual variation in standards of relevance. 'One knows *p*' is supposed to count as true in the good case when the bad case is irrelevant; but if (speaking in such a context) the bad case also counts as differing from the good case in non-pragmatic respects such as evidence, why invoke pragmatic respects such as relevance?

8.8 SCEPTICISM WITHOUT SAMENESS OF EVIDENCE

Sometimes the good and bad cases in a sceptical argument have a different structure from that considered so far. Scepticism about *p* does not always require the (metaphysical) possibility of a bad case in which one falsely believes *p*. Let *p* be a mathematical truth, and therefore a necessary truth. Thus no case in which one falsely believes *p* is possible; yet one can still doubt *p*, by doubting the reliability of the methods which led one to believe *p*. After all, someone with great faith in a certain coin might decide to believe *p* if it comes up heads and to believe $\sim p$ if it

[5] The equation allows sameness of evidence between two cases in which, without knowing *p*, one justifiably believes *p*, in one case truly, in the other falsely. Fumerton 2000 describes such a case, under the impression that it constitutes a difficulty for the equation.

comes up tails; if he believes *p* because the coin came up heads, he does not know *p*, although he could not have believed *p* falsely. His belief fails to be knowledge because the method by which he reached it could just as easily have led to a false belief in a different proposition (see also section 4.4). His evidence in the bad case includes the proposition that the coin came up tails, and therefore differs from his evidence in the good case. Even when false belief in *p* is possible, one's evidence in the bad case which motivates scepticism about *p* need not be the same as in the good case. Incoherent dreams feel coherent; one might therefore doubt the coherence of one's present experience, even though it feels, and in fact is, coherent. Since one's experience is coherent in the good case and incoherent in the bad case, one's evidence presumably differs between the two cases. The sceptic need not claim that in some possible case, one's experience is incoherent and one has the same evidence which one actually has, for that would be too close to asserting dogmatically that one's actual experience is incoherent. Rather, the locus of the doubt is the method by which one reaches the belief that one's experience is coherent.

Does the discussion of sceptical arguments in sections 8.2–8.7 generalize to these examples? One might think not. 'Method' has replaced 'evidence' as the crucial term, and they seem to be crucially disanalogous: we are far more strongly tempted to assume that one is always in a position to know what one's evidence is than to assume that one is always in a position to know what method one is using. The sceptic will happily allow that our beliefs may have inaccessible, unconscious causes, and argue that for all we know such causes are quite insensitive to whether the beliefs they cause are true. What if we are in fact using a method which cannot yield false beliefs? The sceptic will point to cases in which we merely appear to be using that method and our resulting beliefs are false. Such cases are supposed to falsify our knowledge claims. For the sceptic, the methods on whose reliability the epistemic status of our beliefs depends are individuated by appearances; the falsity of beliefs reached in cases which appear the same as the actual case in respect of one's method constitutes unreliability in one's actual apparent method.

In effect, the sceptic distinguishes the *process* by which one's belief was caused from the *rule* which one used in reaching the belief. Processes are at the subpersonal level, rules at the personal level. One can take responsibility for one's rules in a way in which one cannot for the processes. One's rationality depends on the rules which one uses rather than the processes which go on in one. One is typically not in a position to know what process caused one's belief, but we are tempted