CHAPTER 1

# CONDITIONS AND ANALYSES OF KNOWING

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PHILOSOPHERS are a contentious lot, and never more so than when debating the conditions and proper analysis of knowing. Most discussion has centered on knowing that something is so ('knowing that' for short). I shall explain my own perspective after sampling the extraordinary range of existing disagreements concerning conditions of knowing that should figure in an analysis of knowing that.

## THE TRUTH CONDITION

Even the seemingly innocent claim that when a subject, S, knows that h, it must be true that h (where we instantiate some complete declarative sentence for 'h') has been contested.[1] L. Jonathan Cohen points out that in appropriate contexts, saying, 'He does not know that h,' or asking, 'Does he know that h?' commits the speaker to its being true that h, and "this commitment cannot derive from an underlying entailment, because what is said is negative or interrogative in its bearing on the issue" (1992, 91). Cohen proposes that the commitment is instead due to the fact that the speech-act of saying, 'He knows that h,' normally gives the audience to understand that the speaker believes that h or accepts that h.

Cohen does not further describe the appropriate contexts that he has in mind, but I suspect that they involve what Fred Dretske (1972) calls the contribution of contrastive focusing to what is being claimed by asserting a sentence.[2] In order to rebut Cohen's challenge to the truth condition, we need to consider contrastive focusing in regard to the expression, 'He knows that h.' When it is not at issue whether h but who it is that possesses knowledge that h, we may raise the issue of whether the person in Cohen's example is among them by asking, 'Does he know that h?' But a negative answer is not simply the negation of a claim free of contrastive focusing which is made by uttering, 'S does know that h' or 'S knows that h.' It is instead the negation of a claim made by uttering the latter with a contrastive focus on whether, given those who know that h, S is among them. Or it might, depending on context, be the negation of the claim that, given that h, S knows in contrast to merely believing or accepting that h.

Accordingly, if we take a philosopher to be seeking an analysis of 'S knows that h' concerning utterances of sentences of this form which do not involve contrastive focus, we do not need to suppose that utterances of the negation of such sentences carry a commitment to its being true that h. Whether it is satisfactory to seek an analysis that is limited in this way will depend on what one wishes to construe as the nature of an analysis.[3] Philosophers have often spoken of seeking a meaning analysis, and if Dretske is right that contrastive focus affects the meaning of sentences, then some nod in the direction of enlarging the brief considerations of the preceding paragraph will be needed, even though they do not require abandoning the truth condition of knowing.

## The Belief Condition

Cohen also attacks the very common presumption that knowing is a species of believing, while criticizing an earlier objection to the belief condition advanced by Colin Radford (1966). But Cohen's critique of Radford is less than persuasive. Radford had based his objection on the following example:[4]

> Unwitting Remembrance: S sincerely tells Tom that S never learned any English history, but Tom playfully quizzes S about dates concerning it. S makes many errors and takes his answers to be mere guesses, but concerning one period gets mostly right answers. After Tom points this out, S says he now thinks he remembers having long ago studied some dates that he thinks indeed were those. (2–3)

Because Tom eventually points to S's success and S subsequently remembers having studied relevant matters and thinking it was such dates, there is reason to suppose that a memory was retained by S after the teaching which is manifested in these concluding details. Simplicity of explanation is then a reason to suppose the memory was also manifested in the earlier responses that S gave during the test.

Cohen seems to neglect these considerations when he says that we can criticize Radford by asking him to tell us more about the example, given a more specific version in which the same questions are put to S later, after S has forgotten what answers S gave to Tom. Cohen points out that there are two scenarios that Radford might describe: (1) The new answers are substantially different; (2) S keeps on giving more or less the same answers. According to Cohen, scenario (1) will provide good reason to suppose that S got the right answers initially only by a lucky fluke and thus did not know what Radford purports S knew. But Cohen then has no explanation of the final details of the original example and will need implausibly to suppose that S's seeming recollection of earlier education is a fluke. Indeed, Radford can elaborate scenario (2) so that when reminded by Tom of that earlier seeming recollection, S cannot repeat it. The plausible explanation of this version of the case will be that S's memories of the earlier lessons and their contents have finally faded to the point of being lost.[5]

Keith Lehrer (2000) maintains that the memory retention only constitutes retention of information, but not knowledge that h, because the latter requires knowing that it is correct that h. Some philosophers will protest that Lehrer's view entails that brutes and infants never know that anything is so, and will charge that Lehrer is too intellectualistic in his account because he focuses on adults who have the concepts of being correct and being true and who easily move back and forth between asserting that h and asserting that it is true/correct that h.

Sometimes Lehrer has allowed (cf. 1974) multiple senses of 'knows that,' while maintaining that the sense that applies to animals and infants is unimportant for epistemology. Yet to propose too wide a separation of senses here will not explain why intuitions are divided on Radford's example, and why the insight has not commonly emerged in discussions that some equivocation has intruded. Radford has rightly protested (1988) that those who flatly reject his categorization of such an example owe us an explanation of why intuitions have been so divided. Cohen has maintained that the example was underdescribed, but that would lead us to expect each individual to waver concerning the verdict, rather than to expect a split verdict among individuals.[6]

The account I shall eventually advocate will treat 'knows' as having a sense that expresses a broad enough category to include knowledge by brutes and infants, and will regard the type of knowing of special interest to Lehrer and to critical debate among adults as a species of such a broader category. So even if

the use of 'knows' in discussing exactly that species does involve a narrower linguistic sense of the term, it is not a disconnected sense, and the difference in intuitions concerning Radford's example may be due to different presumptions about the focus of the question, 'Does S know?' with some respondents reflecting on the genus I have mentioned (and will analyze below) and others presupposing the common philosophical restriction of attention just to that species of knowing pertaining to the context of critical inquiry.

Cohen's own argument against a belief requirement for knowing (cf. 88) begins with certain insights that he credits to Descartes and to Karl Popper that a natural scientist could ideally conduct inquiries and experiments without believing the favored hypotheses the scientist employs in those inquiries. Where Popper (1972) understood 'knowledge' in a special sense as labeling, for example, theories and hypotheses that a group of scientists have made it their policy to utilize in their work, Cohen speaks of a single scientist as knowing. To be good scientists, we allow for adequate open-mindedness, and at least some members of research teams need, according to Cohen, to refrain from believing the hypotheses that they employ to be true. They need instead to accept the hypotheses, where this is a voluntary action of setting themselves to go along with the hypotheses and anything they entail, by being set to employ them as premises in predicting, explaining, and pursuing further research. Cohen proposes that having the knowledge that h implies that the scientist accepts that h and that the proposition that h deserves acceptance in the light of cognitively relevant considerations (cf. 88). Such acceptance is compatible with the scientist's realizing that a theory that h faces anomalies, or that a law that h is a simplification or idealization, and so is compatible with the scientist's disbelieving that h when nonetheless sincerely claiming to know that h (cf. 90–92). Thus, Cohen has presented what turns out to be an objection to a truth condition of knowing, provided that we treat a proposition that is a simplification or idealization as false.

But is asserting or theoretically employing a proposition recognized as a simplification or idealization putting it forth as true? If not, then perhaps the so-called truth condition of S's knowing that h may be retained when formulated as requiring that h, and if the asserting of h in the truth condition itself is similarly not taken as putting it forth as true that h.

If Cohen's view is appropriate, then it impugns Alan R. White's attempt (cf. 1982, 59–61) to fine-tune our understanding of the truth condition so that we speak of reality, not of truth, as the prime condition of knowledge.[7] My own later analysis of knowing that as a category broad enough to allow animals and infants to know will focus on the obtaining of the state of affairs expressed by the proposition that h rather than on that proposition's being true. And the state of affairs expressed by a scientist's simplification or idealization never occurs. So if utterances of the form, 'S knows that h,' do have both appropriate plural and singular subjects when we instantiate for 'h' such a simplification or idealization, then we

should go along with Popper in regarding that as a different sense of 'knows that' and of 'knowledge' from the one of interest in my analysis, which Popper regards as concerning an aspect of a knowing subject.

Cohen does not dismiss the relevance of believing but incorporates it in a disjunctive requirement that S either believes that h or—in the fashion indicated above—accepts that h.[8] But philosophers are typically dissatisfied with disjunctive conditions for important phenomena.

One difficulty for Cohen's disjunction is Alan R. White's list of examples of knowledge that h prior to the beginning of any belief in that knowledge, but which turn out also to be prior to acceptance of Cohen's sort: (1) One makes a discovery but fails to recognize it; (2) One is unable to believe that one has proved what one has; (3) Hypothetically, a strange or inexplicable way of acquiring knowledge, such as clairvoyance, telepathy, intuition, suggests a correct answer to one to some question but without one's believing the answer; (4) One has been informed of something, for instance, by a teacher, but does not believe [nor accept] it (1982, 90).[9]

## The Justification Condition and the Standard Analysis of Knowing

When S's knowing that h is treated as a state of affairs in which the truth condition and the belief/acceptance condition are satisfied in conjunction with the satisfaction of a justification condition, such an account has commonly come to be called the standard (or traditional or tripartite) analysis of knowing. It was contemplated by Plato in the Theatetus, endorsed by Kant and by a number of prominent twentieth century philosophers, including A. J. Ayer (cf. 1956, 34) and Roderick Chisholm (cf. 1957, 16).[10]

Yet philosophers have disagreed about how to construe this technical label. Taken narrowly, it means the view that S's knowing that h is a species of S's believing that h, whose differentiae, that is, characteristics that distinguish this species, are the correctness and the justifiedness of S's believing that h. From this perspective, a philosopher who rejects the belief/acceptance condition will ipso facto reject the justification condition.

Although that perspective makes it natural to speak of 'the justified, true belief analysis' of knowing, it has been recognized that a still wider understanding of the label 'the standard analysis' takes a justification condition to be independent of the belief/acceptance condition. For instance, Robert Audi (1993) points out

that just as we may say to a child, 'It's justifiable for me to punish you for what you did,' or, 'I'm justified in punishing you for what you did,' and yet show mercy, so we may regard the justification condition of knowing as requiring that it be justifiable for S to believe that h—whether or not S does believe that h. The standard analysis may accordingly be phrased as follows:

S knows (that) h if and only if
h;
S believes (that) h/accepts that h; and
S is justified in believing (that)/accepting that h.

This account presents the truth condition, the belief/acceptance condition, and the justification condition indicated above as individually necessary and jointly sufficient conditions of S's knowing that h, where we substitute a full, declarative sentence for 'h' but we leave open what individuals other than adult humans are within the range of variable 'S.'

## Gettier's Counterexamples and Gettier-type Examples

In a brief, famous paper, which has provoked hundreds of responses and an ongoing debate, Edmund Gettier (1963) described the following two examples in order to argue that the standard analysis is too broad, that is, too weak to exclude some examples where S fails to know that h. (1) Coins in the Pocket: S justifiably believes about another person, Jones, the unsuspectedly false proposition that F1: 'Jones will get the job, and Jones has ten coins in his pocket.' S recognizes that this proposition entails that P1: 'The man who will get the job has ten coins in his pocket,' which S then believes on the grounds of the proposition that F1. Unsuspectedly, not only does S have ten coins in S's pocket, but it is S who is going to get the job. (2) Brown in Barcelona: S has strong evidence for a proposition, which S does not realize is false, namely, that F2: 'Jones owns a Ford.' S picks at random a city name, 'Barcelona,' and recognizes that the proposition that F2 entails that P2: 'Either Jones owns a Ford or Brown is in Barcelona.' Not having any idea of Brown's whereabouts, S proceeds to accept that P2 on the grounds of the proposition that F2.

Gettier offered no diagnosis of these examples and no formula for constructing further examples that he was prepared to regard as of the same type. But as

other philosophers proceeded to offer additional examples that they regarded as importantly similar to one or another of Gettier's, the technical label, 'Gettier-type example,' sprang into use. One such example was described by Keith Lehrer (1965, 169–70):

> Mr. Nogot: Somebody in S's office, Mr. Nogot, has given S evidence, E, that completely justifies S in believing that $F_3$: 'Mr. Nogot, who is in the office, owns a Ford.' Evidence E consists in such things as Nogot's having been reliable in dealings with S in the past, having just said to S that he owns a Ford, and having just shown S legal documents affirming it. From the proposition that $F_3$, S deduces and thereby comes to believe that $P_3$: 'Somebody in the office owns a Ford.' Unsuspectedly, Nogot has been shamming and it is someone else in the office who happens to own a Ford.[11]

We shall focus on Lehrer's example because many provocative variants of it occur in the literature and because it avoids the objection that in the coins in the pocket example S's articulation of $P_1$ may employ the phrase, 'the man who will get the job,' to refer to Jones rather than to S, so that the truth condition is not satisfied.[12]

There has been disagreement over the scope of the label, 'Gettier-type example.' Some take it to be any example where satisfaction of the three conditions of the standard analysis fails to be sufficient for S's knowing that h. Others, including myself (1983), regard Gettier as having called attention to a more special variety of counterexample, and they allow that the standard analysis might face other types of counterexamples.

## Counterexamples Concerning Relevant Alternatives

One such example reveals the standard analysis to be too weak:

> The Barn Facsimiles: S believes that $P_4$, 'Here is a barn,' because S sees a barn from the front while driving through an unfamiliar countryside, unaware that people there who wish to appear quite affluent have erected many papier-mâché constructions that look just like the barns in the area from the road.[13]

Ignorance arises in this case because, very roughly, S lacks the ability to discriminate items involved in the state of affairs of which S has knowledge from certain other relatively nearby items, whose alternative involvement would render

false S's belief that h. This element is lacking in Gettier's own cases and in the Nogot case.

## Counterexamples Concerning the Social Aspects of Knowing and Unpossessed Information

Another well-known, although controversial, example that arose in the early literature provoked by Gettier's article was presented by Gilbert Harman (cf. 1968, 172):

> The Newspaper: S believes a true, bylined report in a generally reliable newspaper that P5: 'A famous civil-rights leader has been assassinated.' The report was written by a reporter who was an eyewitness. Unsuspected by S, those surrounding S do not have any idea of what to think since they have additional information consisting in later reports to the contrary, which they do not realize were due solely to a conspiracy of other eyewitnesses aimed at avoiding a racial incident.

The example, like a number of others that it in turn provoked, concerns, very roughly, evidence not possessed by S but which is available in some relevant respect. In this case, the evidence, albeit misleading, is possessed by members of the social group with which S cooperates in inquiries. This illustrates one way in which some philosophers (e.g., Sosa 1991) see knowing as relative to epistemic communities to which a knower (at least potentially) belongs, thereby challenging an egocentric focus in epistemology.

Although intuitions are divided concerning this example, those who agree with Harman that S fails to know that P5 need not regard this example as containing the same sort of detail that made Gettier's and Lehrer's counterexamples work.

## The Gettier Problem

Very few philosophers think that Gettier and Lehrer misunderstood the justification condition of the standard analysis in a way that vitiates their counterexam-

ples.[14] 'The Gettier problem' has thus come to name the problem of finding an improvement upon the standard analysis that will avoid Gettier-type counterexamples without thereby opening the new analysis to further sorts of counterexamples. This improvement can be attempted by either (1) adding requirements to the three conditions of the standard analysis, or (2) substituting new requirements for one or more of the three conditions in the standard analysis.

Since philosophers disagree as to what species of example is labeled by 'a Gettier-type case,' they of course disagree as to what the Gettier problem is.

# Challenges to the Justification Condition

In the post-Gettier literature, various replacements or improvements upon the justification condition of the standard analysis have been explored.

## Early Causal Theories

Efforts to develop causal analyses of knowing initially appeared to make the justification condition unnecessary, but had difficulty because of the causal dependence of perceptual beliefs on circumstances such as lighting conditions and S's distance from the scene in such a way as to alter verdicts concerning whether S knows. Consider the following case:

> The Beloved Speck: From wishful thinking but not reliable information S forms the true belief concerning a speck that S sees on the horizon P6: 'That is a boat bearing my approaching lover.' (Ackermann 1972, 96)

A causal analysis of knowing might deal with this example by requiring that the occurrence/obtaining of the state of affairs expressed by the proposition that h (let us henceforth symbolize this by 'the occurrence/obtaining of h*') be the cause of S's believing/accepting that h,[15] thereby entailing satisfaction of both the truth and belief conditions. In the above case, the cause of S's believing that h is likely to be regarded as S's wishful thinking, and the occurrence of h* one of the relevant background conditions.

But such a focus was seen to be too narrow. When one knows an empirical universal generalization covering all of time and space to be true, for instance that

G: 'Iron is magnetic,' the obtaining of G* is not suitably called the cause of one's believing that G. This prompted causal theorists to consider requiring that the occurrence or obtaining of h* be causally related in some other way to S's believing that h, for example (1) mention of the occurrence of h* by itself provides some causal explanation of S's believing/accepting that h; or (2) the sequence of explanations of the stream of causes and effects culminating in S's believing/accepting that h at some place includes mention of the occurrence of h*. Even if we understand suggestion (1) so that there can be different types of causal explanation, one of which involves the broad, everyday practice of selecting part of a situation as 'the cause,' it is unclear whether (1) really helps with S's knowing that G, since only some of the obtaining of G* manifests itself to one or to the investigators upon whom one depends.

In contrast, a causal analysis depending on (2) can treat the obtaining of G* as explaining those of its instances which help to cause what results eventually in one's believing that G. But (2) makes the account of knowing too broad without some further requirement, since the sequence of explanations of the sort that it mentions at least eventually utilizes, for example, the axioms of number theory, and so no matter what bizarre local causation there was of S's believing those axioms, the account confers knowledge that they hold upon S (cf. Klein 1976, 796). Even if a causal theorist is restricted to empirical knowledge, a similar objection arises. Assuming that everything today is traceable back to the Big Bang, no matter what bizarre reasons S has for believing that the Big Bang occurred, approach (2) will not show that this is a case of ignorance.

Alvin Goldman, one of the early causal theorists, acknowledged that more restrictions would have to be placed on the sort of causal connections leading to S's believing that h, as he illustrated by the following example (1967, 363):

> The Careless Typesetter: On a newspaper known to be generally reliable, a typesetter carelessly misprints details of a story that S misreads because of eyestrain in such a way as to be caused to believe the true details.

Goldman tried to deal with this case by adding the requirement that the type of causal chain leading to S's knowing that h be one such that S is able to intellectually reconstruct all of the 'important' links in it and be justified concerning the reconstruction. In so doing, Goldman retained some consideration of justification but in a vague way that makes the analysis too demanding to permit attribution of knowledge to brutes and infants.

Goldman might have attempted to avoid such overintellectualization by refraining from requiring that the right kind of causal connections for knowing involve understanding of them by the knower. Perhaps he could have required that they are what philosophers call 'nonwayward' or 'nondeviant' causal chains. There has been considerable controversy about what constitutes such nondeviance in various other contexts (e.g., concerning the performance of intentional actions;

concerning the forming of a representation of something). A detail of my own solution is that links in the chain (a) not involve 'excessive generative potential' (roughly, that it not be the case that the beginning of the link could easily have produced some other upshot than the end of the link) and (b) not involve 'excessive receptivity' (roughly, that it not be the case that the end of the link could easily have been produced by some other antecedent than the beginning of the link).[16] The above example involves both types of deviance.

Perhaps one might also show that excessive receptivity is involved in the barn facsimiles case within the causal link ending in the formation of S's percept. Yet the type of causal account under consideration ignores the social aspects of knowing and does not explain the division of intuitions concerning the newspaper case, which the account would treat as a clear case of knowing. In addition, it is unclear how the account can be adequate to cover abstract or nonempirical knowledge.

## The Nonaccidentality Requirement

Peter Unger once proposed an analysis of knowing that was worded broadly enough both to hold out hopes of application to abstract knowledge and to allow the relevance of various types of causal considerations to empirical knowledge: S knows (at time t) that h if and only if it is not at all accidental (at t) that S is right about its being the case that h (1970, 48). But the vagueness of the analysis provoked very different interpretations.[17]

The suggestion might be applied to the case of Mr. Nogot by thinking of the type of accident that consists in the intersection of two previously unconnected streams of events. The stream of events that gave rise to its being true that $P_3$: 'Someone in the office owns a Ford,' did not arise from a collection of earlier factors that included what produced S's believing that $P_3$. In that respect it is an accident that $P_3$ and S believes that $P_3$.

Yet the following Gettier-type example produced by Keith Lehrer shows that this understanding of Unger's analysis makes it too weak:

> Tricky Mr. Nogot: This is like the original Nogot case except that Nogot has a compulsion to trick people into believing truths by concocting evidence that is misleading in the manner that E was misleading in that case, and Mr. Havit's owning a Ford causes Nogot to realize that $P_3$: 'Someone in the office owns a Ford.' (1979, 76)

Lehrer's point was roughly that there is a stream of events wherein the occurrence of $P_3$* causes tricky Mr. Nogot's cooking up the evidence which causes S's believing that $P_3$, but S still fails to know that $P_3$.[18]

Yet some might suppose that Unger's talk about accidentality is broad enough to cover the presence of a deviant causal chain. Perhaps excessive receptivity enters

into the link that ends with tricky Mr. Nogot's forming the intention to get S to believe the truth in question. Might not Nogot be just as likely to pick some other truth to convey to S by trickery? Accordingly, I have suggested (forthcoming) an improvement upon the example in which the compulsion is highly specific to information about automotive facts regarding people in the office.

Another type of situation in which we call an event an accident is when we are calling attention to a fluke during the manifesting of the powers or susceptibilities of something: either (i) some part of the mechanism for the full manifestation of the power or susceptibility fails to obtain; or (ii) the mechanism for the manifestation of the power or susceptibility on the present type of occasion does occur but a manifestation of the power or susceptibility occurs that is considerably less likely to occur relative to the operating of the mechanism than other manifestations. I shall eventually present an account of knowing that will entail possession of a representational power but, contrary to Unger, will not entail that S believes/accepts that h, for it will not entail that the power actually is manifested. Yet a full manifestation of the power in question by S's believing/accepting that h (allowing that other things may also count as a full manifestation of the power) is no fluke and does represent the occurrence of h*. In that respect, even if S is a brute or infant, it will not be accidental that S is right that h.[19]

## Reliability Analyses and Conditional Analyses

Alvin Goldman's attempt to deal with the barn facsimiles example introduced a requirement that S's believing that h be produced or sustained by a 'reliable' causal process or mechanism, although not necessarily one involving the causal influence of the occurrence of the state of affairs h* (cf. 1976). Goldman restricted most of his discussion to noninferential, perceptual knowledge that h. He oversimplified by characterizing reliability partly in terms of the falsity of the following subjunctive conditional: if S were in a relevant possible alternative situation in which it were not the case that h, then the situation would cause S to have a sense experience quite similar to the one presently actually causing or sustaining S's belief that h, which in turn would cause S to believe that h. Goldman allowed that considerations of what makes for relevance of an alternative might shift with context or perhaps with the interests of the person attributing knowledge to S. When the nearness of the barn facsimiles is taken as salient, the logical possibility that S sees one of them in rather similar circumstances becomes counterfactually relevant.

But conditionals not hedged with accompanying glosses have seldom turned out to be accurate for philosophical purposes, especially for analyzing the presence of powers or abilities (cf. Shope 1978; 1983). There are versions of the barn facsim-

ile case that involve ignorance yet in which the above conditional is satisfied because a guardian angel is present who would block the formation of a false belief in S that h, were S to look toward a mere facsimile, for example, by blurring S's vision or by stopping S's sensory experience from causing S to believe that h. In a less fantastic variant, it might be hidden electronic machinery that is tracking S's eye motions which would have such interfering consequences.

A problem that only received Goldman's explicit attention in later stages of his research program, but which was lurking even at this point, is the Generality Problem: At what level of generality versus specificity is a given element of the analysis to be understood? Put this broadly, the problem is faced by any philosophical analysis of any topic, and failure to clarify a solution will leave an analysis vague. The problem affects our understanding of Goldman's mention of relevant alternatives. Suppose that S visually knows that P7: 'An orange balloon is floating over the horizon.' If we understand a relevant alternative situation in a quite general way so that it may include the moon's being in the direction of S's glance, we thereby leave open the continued presence of the balloon, which would block light from the moon from reaching S's eyes and would account for S's not forming a false belief that P7. Goldman points out that becoming so specific as to require that a relevant alternative situation must include the absence of the balloon would inappropriately prevent us from considering what S would believe in situations where, for instance, the balloon is at a somewhat altered distance from S. The upshot would be to incorrectly grant S knowledge that P7 when S lacks the needed discriminative ability relative to the latter situation. So Goldman makes the vague suggestion that we should only construe alternative distance-orientation-environment relations "where necessary" to involve the absence of an object about which S forms a belief that h (Goldman 1976).

Later discussion of various reliable process analyses focused on a different element because such analyses reintroduced explicit mention of the process/mechanism that causes or sustains S's believing that h and did not merely specify a simple conditional about what would happen if S were confronted with a relevant alternative. But all of these analyses face the generality problem with respect to characterizing the process leading to or sustaining belief.[20] For instance, given a very general characterization, for example, 'the process of visually experiencing an object as part of a causal generation or sustaining of a belief concerning the object,' S may be very reliable in reaching true beliefs, and so in the case of the beloved speck will turn out to know that P6. But a verdict of ignorance will instead be demanded if to the above description of the process we add that it is dominated by the influence of wishful thinking.[21] Goldman more recently suggests that cognitive science may someday identify the types of factors leading to types of beliefs (cf. Goldman 1996). But Frederick Schmitt (cf. 1990) thinks that we need to constrain epistemological type individuation by so-called folk psychology, and by how ordinary people think of types of processes involved in belief formation.

The reliance on subjunctive conditional clauses in an analysis produced trouble for Goldman in a further way. Goldman realized that even when a true belief is reached by a reliable process, a person may not know because of failing to employ other available processes, for instance, failing to draw upon additional available evidence (cf. 1985, 109). (Although it is not Goldman's illustration, some philosophers might view Harman's newspaper case in that way.) But Goldman attempts to capture this insight by requiring the truth of the subjunctive conditional, roughly, that there is no reliable process available to S which, had it been used by S in addition to the process(es) actually used, would have resulted in S's not believing that h. But suppose that S knows that P8: 'I have not during the last five minutes employed reliable process R.' For instance, R might be some reliable process of arithmetic computation. Yet had S employed this process, S would have realized it and not have believed that P8 (cf. Shope 1983, 170n).

The generality problem also affects the prospects for a reliability analysis being able to deal with Gettier-type examples. Goldman relies on considerations about relevant alternatives in order to deal with such examples. For instance, in the original Nogot case, the actual presence of people in the office who stand in legal relationships to autos which bear on whether or not the people own the vehicles is analogous to the nearby presence of barn facsimiles, and makes relevant the alternative situation in which nobody in the office owns a Ford, yet Nogot provides the same original evidence.[22]

Another of Goldman's guidelines is that the more unusual an alternative is, the less we are inclined to treat it as relevant. Apparently, this is supposed to be why S can still know that someone in the office owns a Ford in the case of Mr. Havit, which is exactly like the original case of Mr. Nogot but in which it is Mr. Havit who owns a Ford and who is not shamming when he presents the evidence to S. If we point out that S cannot discern the difference between this situation and one in which Havit's Ford has just unsuspectedly been repossessed or has been destroyed by a meteorite or runaway truck, Goldman can reply that these alternative situations are unusual.

Yet the tricky Nogot cases may appear inhospitable to this treatment. For in them we may presume that it is not unusual for someone in the office not to own a Ford, and in an alternative situation where nobody does, Mr. Nogot is set to refrain from giving S evidence that someone does. But this is a difficulty for Goldman only if S's process of belief-formation is described in enough detail to bring in numerous specific features of Mr. Nogot's intentions and motivations. The process will turn out to be unreliable if characterized at a higher level of generality, for example, as forming a belief guided by evidence that has unsuspectedly been fabricated. But a reliability theorist needs a rationale for ascending to that level of generality.

This concern is not obviated by Goldman's having eventually added to his reliability analysis by requiring not only 'local' reliability, that is, reliability in the

actual context of S's believing that h, but also 'global' reliability, reliability for all or many uses of the process. For if the process is very specifically characterized, then tricky Mr. Nogot, being intelligent, careful, and hopelessly in the grips of his neurosis, will typically generate true beliefs in victims through his trickery.

The requirement of global reliability also pushed Goldman to explore various ways of characterizing what alternatives are relevant to assessing such reliability. He eventually proposed that they are the alternatives that are consistent with our general beliefs about the actual world (cf. 1986, 107). But I have pointed out (cf. 1989, 149) that we believe that there are actually very many ways in which a person could be disfigured by a mentally disturbed individual, and so Goldman's suggestion may face an insufficiently high rate of correct belief-formation in the following case of genuine knowledge:

> Fortunate Beauty: S justifiably believes the true statement that P9, 'Beauty is present,' on the basis of how Beauty looks, and has acquired a perceptual schema of her through an ordinary learning process. Yet Beauty is fortunate that no mentally disturbed individual has just recently, unsuspected by S, disfigured her in a way that would prevent S's recognizing her on the basis of her visual appearance. In many alternative ways of being disfigured so as to be unrecognized Beauty would trigger in S a false belief in the denial of P9.

Moreover, Goldman is not able to explain the divided intuitions that have been provoked by the newspaper example, since on his view S definitely fails to know because the involvement of the media makes relevant an alternative where S and those around S have the information originally described, but it is S who has the misinformation since the initial reporter for the paper was mistaken.

By not explicitly considering the manifesting of rationality during belief formation, Goldman's reliabilism has provoked the objection that it is too weak to rule out knowledge in cases (albeit possibly fictitious) of belief-formation through certain very unusual processes such as clairvoyance. Laurence BonJour (1980) describes the case of Norman's suddenly becoming able through budding, unsuspected clairvoyance to believe accurately in what city the President happens to be. BonJour holds Norman's belief to be irrational: "From his standpoint, there is apparently no way in which he *could* know the President's whereabouts" (62–63). A sufficient reason, according to BonJour, for Norman to treat his belief as an unfounded hunch and to refrain from it is the fact that "there is no way, as far as he knows or believes, for him to have obtained this information."

But Goldman may protest that BonJour in effect exposes an alternative process available to Norman, which involves reflecting seriously about whether there is the sufficient reason mentioned by BonJour, that would result in Norman's belief's not continuing.

Lehrer has constructed an analogous counterexample that does not include the above type of reason available to the subject and so is more effective as an objection: Mr. Truetemp has true beliefs once an hour as to his body temperature

but no idea why he has them, since unsuspectedly a benevolent surgeon concerned with Mr. Truetemp's health problems related to body temperature has implanted a device generating such accurate beliefs via a brain probe (1996, 31–33).

## Reliable Indicator Analyses

An approach that in some respects resembles the one that I shall advocate is sometimes said to treat S's believing that h (alternatively: believing it for the reasons that S does) as a reliable indicator or a reliable sign of the obtaining of h* (e.g., Armstrong 1973; for discussion see Shope 1983). This is sometimes called the thermometer model since, analogously, the height of the thermometer's mercury column may be a reliable indication of the ambient temperature's being such-and-such a degree.

The idea of x's indicating y is broad enough that it need not concern what process ends with or sustains x, but it faces a generality problem concerning the characterization of background conditions for the lawlike, probabilistic or statistical connection involved in indicating to obtain. (Compare the fact that there must be a vacuum above the mercury column in certain thermometers for the height of the column to indicate what it does.) In response, some reliability theorists have resorted to using problematic conditionals.

## Conclusive Reasons Analyses

Although philosophers who defend what are called conclusive reasons analyses do not always speak of indicating, we might classify their analyses as versions of a reliable indicator view which resort to conditionals in order to characterize indicating, and which sometimes add additional requirements for knowing.

Examples of subjunctive conditional requirements that such accounts have proposed are the following or some combination of them: (1) If it were false that h then S would not believe/accept that h; (2) If S were to have the reasons S does for believing/accepting that h and it were false that h then S would not believe/accept that h; (3) There is some subset, C, of existing circumstances that are logically independent of the obtaining of h*, such that if it were false that h and C were to obtain then S would not believe/accept that h; (3′) . . . then S would not have the reasons S has for believing/accepting that h; (3″) . . . then the reasons S has for believing that h would not all be true; (4) If it were false that h and S's existing circumstances were to differ only in the ways causally or logically required by the obtaining of not-h* then S would not believe/accept that h; (4′) . . . then S would not have the reasons S has for believing/accepting that h; (4″) . . . then

the reasons S has for believing that h would not all be true; (5) If it were false that h and S's existing circumstances were to differ only in the ways causally or logically required by the obtaining of not-h* and S were to employ only the belief-forming/sustaining process(es) that S did—if any—then S would not believe/accept that h.

It is puzzling how to understand any of these conditionals when it is a law of nature that h[23] or a necessary truth that h. Moreover, cases where there is potential for what philosophers and lawyers call alternative causation of S's reasons for believing that h will be counterexamples to all the above requirements, as was revealed by the following case:

> Eloise's Phone Call: As he talks on the telephone, Abelard comes to know that P10: 'Eloise is wishing me happy birthday.' He does not suspect that an actress hired by Abelard's psychiatrist to impersonate such a call was trying to get through at the same time as Eloise, and was blocked only by Eloise's having reached Abelard. (cf. Carrier 1971, 9; 1976, 242)[24]

Conditional (5) was advanced by Robert Nozick (cf. 1981), at least concerning knowledge where the truth that h is not a necessary truth. Ernest Sosa has objected (cf. 1996, 276) that typically, when S knows that h, it will be true that S knows that P12: 'S does not falsely believe that h' but even if S were falsely believing that h, S would still believe that P12.[25] This objection also shows that all the other conditional requirements listed above are too strong.

The reliability theories in question are too far removed from dealing with social aspects of knowing, which are relevant not only to the newspaper case but to the following example, which shows that analyses that rely on the above conditionals are too weak if left unsupplemented by further requirements:

> The Sports Fan's Surmise: On a quiz show, S cannot remember who achieved a certain distinction in sports but does make a correct educated guess on the basis of some fragmentary information that S can recall. (cf. Olen 1976, 151)

Hector Neri Castaneda (1980; 1989) has defended a complex conclusive reasons analysis according to which, when S knows that p, S believes some conjunction of true propositions, e, and it is a nomological truth that ceteris paribus if e then p. This truth, in turn, is relative to a true conjunction of (i) some collection, s, of propositions that express principles of world order, such as laws of nature, and (ii) some proposition, that z, about 'structural' regularities in the context which are (a) relevant to S's determining the truth or the falsity of the proposition that h and (b) such that S has a propensity to make inferences in accordance with the proposition that z (such as when inferring that p from the proposition that e). The proposition that z says that the structural circumstances are either normal or only abnormal in the respects $r_1, \ldots, r_n$. As a further condition of S's knowing that p, Castaneda requires that S believes that z.[26]

Many criticisms that I previously offered (cf. 1983) of Castaneda construed his idea of normality as a statistical one. He responded that this was not his intent and that by speaking of the normality of the situation he meant that "either there were no respects that could make that p false or doubtful or every [such] respect has been cancelled by an opposite respect, hence, has restored certainty and has defeated the falsity-making character of the former respect" (1989, 235–236). He suggested that it might be clearer to speak of the standardness than of the normality of the circumstances.

The force of the modal "could" is initially unclear in this gloss. Although one is tempted to construe it as having a nomological import, the phrase, "or doubtful" is open to interpretation as carrying an epistemic force, and seems to move in the direction of what will be called in the next section a defeasibility analysis. Yet Castaneda's contrast was with restored certainty, and he apparently means a preservation of what he called the 'guarantee' of the truth of the proposition that p, its being in that way certain to hold.

But thus construed, Castaneda's account is too weak to show why S fails to know in the tricky Mr. Nogot cases, where such a guarantee does arise from the very nature of Mr. Nogot's compulsion. I have also objected that the account fails to explain why S fails to know that P13, 'S has brain damage,' when brain damage gives S flimsy evidence that P13 (e.g., causes the seeming, but false, recollection that someone has revealed to S that P13) and where the possession of that evidence causes S to believe that P13 (cf. Shope 1983, 143n2).

Castaneda's reply to this objection was that I "do not take into account the Multiple-Species thesis" concerning knowing that (1989, 241n4). As part of that thesis, Castaneda maintains that the phrase, 'knows that', has multiple meanings, each picking out a different species of knowing that. Thus, he may be regarding the meaning that he is concerned with as different from the one that Lehrer and myself consider in regard to tricky Mr. Nogot. Indeed, Castaneda argues that in a similar fashion Lehrer and Alvin Goldman have talked past each other concerning the following well-known example introduced by Lehrer and Thomas Paxson, Jr.:

> Neurotic Grabit: S sees his acquaintance, Tom Grabit, steal a book from the library right in front of him. But unsuspected by S, Tom's mother (or father) has said that Tom was miles away at the time of the theft and has a twin brother, John, whom the parent tends to visually mistake for Tom, who was in the library at the time. Yet the parent's statement is only a neurotic lie. (cf. 1969, 228)

Epistemologists have usually followed Lehrer and Paxson in judging that S does know that P14: 'Tom Grabit stole the book.' Yet Castaneda purports (cf. 1989, 234) that Alvin Goldman reached the opposite verdict when Goldman wrote that the parent's statement "may be enough to defeat any claim" that P14 (1986, 55). But Castaneda has misunderstood the force of Goldman's "may," which concerns

certain circumstances in which John's stealing the book is a relevant alternative. They are circumstances which do not contain the additional factor of the neurotic lying. So when Goldman comments that the alternative of John's stealing the book "seems to be relevant," he is only commenting on a misleading appearance to one who does not suspect the neurosis but who is aware of parents' tendency to be truthful about the whereabouts of their offspring. The proposition that Tom's parent made the statement in question is what some epistemologists call a 'misleading defeater,' roughly, something whose conjunction with S's evidence yields a basis insufficient for S's knowing yet where additional circumstances account for that not preventing S from knowing. So there is no reason to accept Castaneda's claim that Lehrer and Goldman mistakenly think that they are dealing with the same analysandum and are really explaining different meanings of 'knows that' or even revising the meaning it had for themselves previously.[27] Thus, I am unpersuaded that Castaneda and I focus on different meanings of 'knows that' in relation to tricky Mr. Nogot. Besides, such appeal to equivocation as a defense against criticism makes it too easy to resist counterexamples by multiplying meanings beyond necessity.[28]

## DEFEASIBILITY ANALYSES

The need to consider the details of the demented Grabit case brings us to the threshold of defeasibility analysis of knowing that. The earliest defeasibility analyses were developed by Keith Lehrer (cf. 1965; 1970), who noticed that Gettier's two cases and a number of others that they had inspired could be handled by adding to the standard analysis a certain type of requirement as a fourth condition of S's knowing that h. One of Lehrer's proposals was to require that for any falsehood, that f, if S were to suppose for the sake of argument that not-f, then S would still be justified in believing that h. In Gettier's two examples, the relevant falsehoods that do not fit the requirement, and thus lead to a verdict of ignorance, are: 'It is Jones who will get the job' and 'Nogot does not own a Ford,' respectively. But the demented Grabit case produced a counterexample and once again a response to Gettier only began a lengthy research program.

The history of this particular line of research is too complex to summarize here.[29] For quite a while, what was in common to all proposed defeasibility conditions was a requirement of a particular truth value for some subjunctive conditional(s) about what would obtain concerning the justification of S's believing/accepting that h if certain hypothetical circumstances were to obtain. But from a

broader perspective, a defeasibility condition might be said to specify what impact is made on a certain aspect, A, of S's epistemic situation if certain hypothetical circumstances were to occur consisting in bringing A into a certain relation, R, to some proposition/propositions, D, which, unsuspected by S is/are true (and which, perhaps, is/are required to be of a specified type, T). In the above illustration from Lehrer, A is the status vis a vis being justified or not of S's believing that h,[30] R is the relation of being co-present with S's believing D, and no further requirement is made that D be of any specific type.

When a proposition impacts on A in a way proscribed by the defeasibility condition upon being in relation R to A, many philosophers say that the proposition is a 'defeater' of (or with respect to) the proposition that h. But because of examples such as demented Grabit, they try to impose a further restriction by requiring defeaters to be of some specific type, T, calling ones that are not of that type 'misleading defeaters.' When the proposed fourth condition of knowing is satisfied, so that any defeaters of the proposition that h are merely misleading defeaters, S's believing/accepting that h is typically spoken of as 'indefeasible.'

Lehrer and Peter Klein (1971; 1981; 1996) may have made the most sustained effort to perfect a defeasibility approach, resulting in quite complex accounts. Having discussed Klein at some length elsewhere (forthcoming; and cf. Plantinga 1996), I shall here focus on aspects of Lehrer's recent views.[31]

Central to Lehrer's exposition of his analysis are three technical labels. The first, 'the acceptance system of S at t', means the set of propositions true at t of the form, 'S accepts that q,' where each acceptance has the objective of obtaining truth and of avoiding falsity with respect to the content of the acceptance. 'The preference system of S at t over acceptances' means the set of propositions true at t of the form, 'S prefers accepting that q to accepting that r,' where each acceptance has the objective of obtaining truth and avoiding error with respect to the content of the acceptance. 'The reasoning system of S at t over acceptances,' means the set of propositions true at t of the form, 'S reasons from acceptance of the premises $q_1, \ldots, q_n$ to acceptance of the conclusion c,' where each inference has the objective of obtaining truth and avoiding error with respect to the content of the inference. Lehrer labels the combination of those three sets of propositions 'the evaluation system of S at t.'

Lehrer's defeasibility condition asks us to focus on what is left of S's evaluation system[32] when we delete from it every statement either of the form, 'S accepts that q,' or of the form, 'S prefers accepting that q to accepting that r,' where the proposition that q is false, and delete all members of the reasoning system of S involving unsound reasoning. Label what is left 'the ultrasystem for S.' Lehrer's defeasibility condition requires that the ultrasystem leave enough of a basis for some combination, k, of its members to relate in either of two ways to any proposition, o, (whether true or false) such that it is relative to the ultrasystem less reasonable for S to accept that h on the assumption that o is true than on

the assumption that o is false: either (1) it is more reasonable relative to S's ultrasystem for S to accept that h than to accept that o, or (2) the conjunction of o and k is (i) as reasonable relative to S's ultrasystem for S to accept as o alone and (ii) not such that it is relative to S's ultrasystem less reasonable for S to accept that h on the assumption that the conjunction is true than on the assumption that the conjunction is false. In technical jargon, Lehrer calls o an 'objection' and calls satisfaction of (1) 'answering the objection,' while satisfying (2) is 'neutralizing the objection.' Thus, the defeasibility condition requires that relative to S's ultrasystem, every objection is either answered or neutralized.

The account succeeds in dealing with numerous Gettier-type cases. In Lehrer's original version of the Nogot example, where S infers that $P_3$: 'Somebody in the office owns a Ford,' from the false intermediate conclusion that $F_3$: 'Mr. Nogot, who is in the office, owns a Ford,' the ultrasystem will no longer include the proposition that S accepts that $F_3$, nor the proposition that S prefers accepting that $F_3$ to accepting that not-$F_3$. So the ultrasystem will lack propositions rendering it at all reasonable for S to accept that $P_3$, a prerequisite of satisfying (1) or (2).

Lehrer also applies the account to a variant where S infers that $P_3$ from the evidence, E, without passing through the intermediate conclusion that $F_3$. Lehrer objects that this "inference rests upon the acceptance of the false hypothetical binding the evidence to that conclusion," that is, the proposition, 'If E then Mr. Nogot owns a Ford.'[33] Lehrer notes that once the proposition that one accepts this hypothetical is purged in forming the ultrasystem, the basis is lost for reasonableness of the preference for accepting that Mr. Nogot owns a Ford over accepting that he does not, and so there is no basis left for its being more reasonable for S to accept that $P_3$ than to accept the objection that Mr. Nogot does not own a Ford. Thus (1) is not satisfied and there are clearly no resources for satisfying (2).

But can the account deal with a variant that does not involve S's bridging the gap between evidence E to the conclusion that $P_3$ by accepting falsehoods. In the variant, S is a highly sophisticated reasoner, whose inference to $P_3$ is not bridged with the help of $F_3$ but is instead bridged by acceptance of the following propositions, all of which are true: (1) 'The statements of evidence E are correct,' (2) 'E is evidence for the proposition that $F_3$,' (3) 'The proposition that $F_3$ entails the contingent proposition that $P_3$,' (4) 'If E is evidence for the proposition that $F_3$, then E is evidence for any contingent proposition entailed by the proposition that $F_3$,' and (5) 'If both (i) the statements of evidence E are correct and (ii) if the statements of evidence E are correct then E is evidence for the proposition that $P_3$, then $P_3$.'

Lehrer also does not attempt to explain the conflict of intuitions concerning the newspaper case. He purports that S does not know that the assassination occurred; S's conclusion rests on accepting the proposition that the newspaper is

a trustworthy source of reliable eyewitness reports about the assassination, which turns out to be false because it published the later denials (cf. 160). But in Harman's original description of the case, it was left open that it may be other news media that give such later reports—which leaves the reliability of the newspaper unscathed. Lehrer would then appear to be required to say that S does know of the assassination. But why should such a difference as to which media issue which reports make the difference between ignorance and knowledge? Moreover, it is this very variant over which intuitions have been divided.

Lehrer's account is also too strong in ruling out cases of knowledge of a sort that Risto Hilpinen (1988) has described. Hilpinen suggests that the physicist, Millikan, believed/accepted the proposition that P15: 'The charge of the electron is n.' Although that proposition is false inasmuch as later research showed the charge to be only quite close to n, Millikan's acceptance of his hypothesis could allow him to come to know various other things in his researches. It is difficult to see what basis remains in S's ultrasystem for accepting those other things, since we may presume that Millikan did not also accept the proposition, 'The charge of the electron is quite close to n,' which appears inconsistent with the proposition that P15.

## Virtue Analyses

The earliest consideration in contemporary literature of whether knowing that might be analyzed in terms of cognitive or intellectual virtues was by David Braine (1971–1972).[34] But Ernest Sosa's treatment of epistemic virtues in some of the essays collected in his *Knowledge in Context* has had more influence. Linda T. Zagzebski and Abrol Fairweather (2001) regard Sosa as beginning his work on epistemic virtue from a naturalistic perspective that defines it in non-normative terms by focusing on one's arriving at true beliefs. To be sure, some philosophers construe the label, 'a virtue analysis,' so broadly as to cover any analysis that includes reference to characteristics of the knower rather than merely characteristics of believing/accepting, and they count some or all forms of reliabilism about knowing as virtue analyses. But a narrower meaning of the label may be more useful, so that a virtue analysis includes some positive normative characterization of the way in which S attains certain goals, such as believing truly, and also incorporates a mention of cognitive virtues[35] of S in that normative component. Sosa initially presented his strategy as analogous to that in moral philosophy of judging actions according to whether they result from stable virtues or dispositions which themselves make a "greater contribution of value when compared with alternatives" (1991, 189).[36]

I have interpreted (forthcoming) Sosa's position as including the following requirement: there is a field of propositions, F, such that the proposition that h is in F and there are conditions, C, such that S is in C at t (with respect to the proposition that h) and such that the first two of the following subjunctive conditionals hold because the third one does: (1) If S were to believe that h then it would be true that h; (2) If it were true that h then S would believe that h; (3) If S were in C with respect to propositions in field F and were to believe a proposition in F then that belief would be true.

Mention of conditions C and field F, of course, raises a generality problem and the question of how to prevent tricky Mr. Nogot cases from satisfying the requirement. Perhaps the latter cases are excluded by Sosa's further requirement that F is to be specified with enough generality to permit useful generalizations about the reliability of S as an informant to an epistemic community relative to which knowledge is being ascribed to S (cf. 1991, 281–284).

But I have argued (forthcoming) that such useful generalizations could arise in connection with what is nonetheless a mere rigging by external manipulators of a match between S's beliefs and the facts, so that it is important that Sosa adds yet a further requirement that the truth of (3) is due to an aspect, N, of S's "inner nature," which "adjusts" S's beliefs to facts in field F and is that "in virtue of which" the beliefs turn out to be right (cf. 1991, 191, 239, 277, 282, 284). So Sosa apparently treats a proposition ascribing a virtue to x as amounting to the statement that there are conditions K such that if x were in K then x would do A in virtue of x's inner nature.

At that point Sosa's analysis of knowing is still too weak because it can be satisfied by a belief caused by a mere capacity to acquire a cognitive virtue. Sosa himself points out that without restriction on the scope of conditions C, the latter might include the process required to get the capacity to manifest itself by the development of the virtue.[37]

It is obscure how to distinguish in a principled way the inner nature underlying a capacity to acquire a virtue from the inner nature involved in the presence of the virtue, or the inner nature involved in a process of developing a virtue from the inner nature that may need to arise during a warm-up period required for the exercise of a demanding cognitive virtue. Moreover, to add a requirement that the virtues pertinent to knowing must be the outcome of a period of maturation and development would deny any knowledge to Donald Davidson's example (1986) of Swampman, a creature who is a molecule-by-molecule duplicate of Davidson formed by lightning strikes upon organic swamp materials and thus moving and sounding like Davidson.[38]

Perhaps Sosa should accept the thesis (cf. Shope 1999) that ability/power/capacity ascriptions cannot typically be analyzed by subjunctive conditionals and avoid relying upon conditionals, as some other virtue epistemologists have done (cf. Code 1992; Kvanvig 1992; Montmarquet 1993). Sosa might try replacing ref-

erence to nature N with reference to cognitive virtues themselves, considered as powers that S manifests, for example, in the course of forming or sustaining belief/acceptance upon various occasions, some of which will also manifest still other cognitive virtues.

But even then Sosa's own account of S's knowing that h remains too weak to deal with the case described earlier concerning the extremely sophisticated reasoner. For in order to explain ignorance in Gettier-type cases such as the Nogot example, Sosa seeks to show that "you could make no connection" between the evidence E and the proposition that someone in the office owns a Ford "except by way of a falsehood" (1991, 25). It is also unclear whether Sosa is able to explain the conflict of intuitions concerning the newspaper case.

We cannot survey all virtue analyses, but since Linda T. Zagzebski has been a significant contributor to this research, we may briefly note a few concerns regarding her analysis, according to which S knows that P if and only if (1) S has a belief that P which has arisen out of some act(s) motivated by the disposition to desire the truth of beliefs; (2) each act referred to in (1) is of a type that would be/is apt to be/might be performed in S's circumstances by a person with intellectual virtues; (3) S's general attitude is such that if there were evidence against the belief that P then that evidence would lead S to reflectively consider S's evidence; (4) S has achieved the truth of the belief through/because of having the motivation referred to in (1) and having performed the type of act(s) referred to in (2); and (5) if the act(s) referred to in (2) at all involve relying upon some testimony of others in the epistemic community, then S has (also) achieved the truth of the belief that P through/because of that testimony's having been motivated by the disposition to desire the truth of beliefs and having been a type of act that would be/is apt to be/might be performed in the circumstances by a person with intellectual virtues (cf. 1996, 280–281, 295, 297).[39]

It is questionable whether requirement (1) does permit, as Zagzebski desires, knowledge on the part of animals and young children.[40] The analysis seems too weak to rule out certain tricky Mr. Nogot cases. Moreover, an example where S knows that P16: 'I lack intellectual virtue V,' appears not to fit requirement (2) because it either makes the requirement impossible to satisfy (if a person with V cannot not be in S's intellectual circumstances) or makes (2) false (if we take circumstances to concern what lies outside S's cognitive character) since a person with virtue V would not perform acts giving rise to the belief that P16.[41]

## PLANTINGA'S PROPER FUNCTIONALISM

There is sometimes no positive normative content to the ascription of a function, for instance, to an instrument of torture, and so perhaps the following additional requirements for knowing that proposed by Alvin Plantinga (1993b), might not be classified as yielding a virtue analysis: (1) the cognitive faculties involved in the production of one's belief are functioning properly in an environment sufficiently similar to the one for which they were designed; (2) the portion of one's design plan covering formation of beliefs when in the latter circumstances specifies that such formation directly serves the function of forming true beliefs; (3) if those circumstances include additional beliefs or testimony, then the latter are or express beliefs also satisfying (2) (and so on, backwards through any chain of input beliefs or testimony from one person to another); and (4) there is a high statistical or objective probability that a belief produced in accordance with that portion of one's design plan in one's type of circumstances is true.

Clause (3) suffices to deal with the case of the highly sophisticated reasoner and the cases involving tricky Mr. Nogot's neurosis, but perhaps not variants of the latter where some background natural radiation causes people in the vicinity to have misleading evidence that is the sole support for a nonetheless true belief. Such tricky circumstances cases will only be ruled out if in fact the designer of us, be it God or evolution, did not include provision for them in our design plan.

I objected (1998) that the account is too weak because it permits knowledge in a variant of the Nogot case, where Mr. Nogot sincerely presents evidence E but, unsuspected by him, not only has he just lost the Ford he owned because of a meteorite strike but he has simultaneously won a Ford in a raffle.[42]

Plantinga subsequently (1999; 2000) proposed to deal with such cases by adding a further requirement concerning what he calls the mini-environment, MBE, for the exercise, E, of cognitive powers producing S's belief, B, that h. He defines MBE as the maximally specific set of circumstances obtaining when B was formed, with the exclusion of circumstances entailing that belief B is true or entailing that belief B is false. So the set does not include S's winning of the Ford in the lottery but does include the meteorite's destroying the other Ford. Plantinga then adds to his analysis of knowing that the requirement that S's mini-environment be "favorable," that is, one in which E can be "counted on" to produce a true belief. Since winning a Ford in a raffle is unusual in sincere Mr. Nogot's relevant mini-environment, the latter is not favorable and he fails to know.

But something in MBE might protect S's process of belief-formation from error. Plantinga acknowledges a variant in which mist and fog conceal barn facsimiles from S (cf. 2000, 159). So Plantinga rejects characterizing favorability by means of a conditional about what S would believe if S were to use E in MBE. Plantinga instead turns to a consideration of what he labels DMBE, defined as

that portion of MBE which is the conjunction of each circumstance in MBE that is "cognitively accessible" or "detectable" by S through E. He suggests that MBE is favorable if and only if there is no state of affairs, X, included in MBE but not in DMBE such that the objective probability of B with respect to the conjunction of DMBE and X falls below a number representing a reasonably high probability, which might vary with context (2000, 160). For instance, X could be the fact that there are more barn facsimiles in the neighborhood than real barns.

Nonetheless, since S can visually detect the object that is in front of him, when S forms the true belief, 'The object that I am seeing is a barn,' DMBE will include his picking out the object in fact located on that spot and so keep the objective probability sufficiently high.

Moreover, there may be examples of knowledge where another factor, Y, outside DMBE is present such that the objective probability remains adequate with respect to the conjunction of DMBE and X and Y. Might there not be cases where X and Y are rare deviations from usual processes connecting memories with conscious recollecting but which cancel each other out so that S still has knowledge in recollecting.[43]

Perhaps Plantinga thinks that tricky Nogot cases have been ruled out by his excluding from MBE circumstances implying that B is true. For a description of Nogot's compulsion seems to have that implication. But this would not hold in a variant of the case where Nogot is instead described as having a compulsion to trick people into believing some of what Nogot does about matters concerning his officemates' car ownership, concerning which he is a highly reliable judge. So in what sense is S's mini-environment unfavorable in this sanitized tricky Nogot case?[44]

Plantinga says that Mr. Truetemp fails to know since he lacks the defeating belief, which his proper functioning requires, that he is constructed like us and none of us has the ability to directly form such accurate beliefs about body temperature (cf. 1996, 333). But this will give no way to deny knowledge in a variant where the person is little Lord Truetemp, a young child, not much learned in the ways of the world, who has not yet revealed to anyone his starting to form the beliefs in question.[45]

# OBJECTS AND KNOWLEDGE

## Propositional Knowledge

Philosophers frequently speak of knowing that as 'propositional knowledge.' But the emphasis on states of affairs rather than on propositions which I shall eventually employ to analyze knowing that will not require acceptance of the frequent presumption that such knowledge is partly constituted by a relationship between a knower and a proposition. Robert Stalnaker (1984) has emphasized that the fact that it is useful to employ that-phrases to label differences among mental states—for instance, believing (desiring; hoping) that the sun will rise tomorrow versus believing (desiring; hoping) that my son will rise tomorrow—is not by itself enough to show that the mental states are partly constituted by propositions and relationships to them, no more than the fact that it is useful to employ numerals to label differences among weights of objects is enough to show that weight is partly constituted by numbers and relationships to them. So whether or not we treat knowing as a mental state, it is hasty to follow some philosophers (e.g., Zagzebski and Fairweather 2001) in speaking of propositional knowledge as involving a proposition.

It is commonplace to answer a question of the form, 'What does S know?' by a that-clause of the form, 'that h.' It is harmless jargon to say that the 'content' of this knowledge is that h if all that means is that what is known is that h. But it is controversial to make the slide to the conclusion that the content is a proposition. If I ask someone to articulate a true proposition, a careful answer will not have the form 'that h' but instead simply the form 'h'. When we write out a deductive argument or articulate portions of a scientific theory, we do not do so by expressing that-clauses. But the portion of a that-clause following 'that' does express a proposition. And we do answer the question, 'What proposition is expressed?' by a phrase of the form, 'that h.' So we can speak of the content of a proposition if all that means is what proposition it is.

## Knowing Objects

One may say that S knows an object, for example, Marakesh. But when one is oneself quite unfamiliar with that city, one is not ready to assert specifically what John knows about it by asserting something of the form, 'that h.' So it is tempting to think that 'S knows x,' where what is substituted for 'x' refers to an object, is to be analyzed roughly as follows: for a number of propositions about details of x, S knows those propositions to be true.

It is not unusual to resort to speaking of propositions when one is remaining noncommittal as to the details of relevant that-clauses. But in this case we produce an analysis that is too intellectualistic to cover knowers that are animals and young children, who know, for instance, their backyards, since it is controversial whether they conceive of truth in the sense of something's being true. (Moreover, not all theories of truth treat a phrase of the form, 'that it is true that h,' as semantically equivalent to one of the form, 'that h.')

This concern provides one reason for shifting our focus to a state of affairs whose occurrence or obtaining can be asserted by affirming something of the form 'h'. For instance, by affirming that Marrakesh contains mosques, we assert the occurrence of the state of affairs: Marrakesh's containing mosques. We might technically refer to the state of affairs expressed by the proposition that h, that is, the proposition that Marrakesh contains mosques, by the notation 'h*', or 'Marrakesh-contains-mosques*.' Different states of affairs concern or are about different objects, properties, or relations. My account of knowing that as a broad category will allow us to regard animals and infants as having such knowledge by speaking of them as having the power to proceed in a way that represents various states of affairs.

## Knowledge by Acquaintance

Some philosophers have held that knowledge of some objects involves a 'direct' relationship called being acquainted with the object, involving experiencing aspects of the object, for example, aspects of one of one's own mental states. A. R. White rejects this view on the grounds that the experiencing may be how one comes to know, but does not constitute the knowing, and so there is no need to postulate a special sense of 'know' in such examples (cf. 1982, 41).

Yet there is a sense in which we speak of knowing an object (in the very wide philosophical sense of 'object') that does imply the experiencing of it, or aspects of it, as when the Bible says of sexual intercourse, "And he knew her." In this sense, some might maintain that even though God's omniscience entails that God knows what imperfection is like, God's perfection entails that God does not know imperfection. Again, when a formerly healthy person ages and loses general strength, we speak of the person as for the first time knowing weakness. Although we shall not be further concerned in the present discussion with this sense, it has an analogy to the one employed in our main account, which helps us to understand why it is appropriate to use 'know' in this extended sense. In the extended sense, for one to know x is for the experiencing of x to give one the power to be involved in relationships to aspects of x that represent x's having those aspects. Sexually experiencing the woman enables the man to engage in a number of

interactions that, depending on details, represent the woman's body's having various intimate characteristics and her mind's having various attitudes or responses. Experiencing weakness gives the aging person the power to manifest it, frequently involuntarily, in behavior that others may point to as representing ways in which weakness gets displayed.

## KNOWING AS A BROAD CATEGORY

I propose to analyze S's knowing that h—construed as a broad category—by avoiding any belief/acceptance condition, and by adding to the condition that h the following requirement, whose terminology will need some explanation:

(R) S has the power to proceed in a way, W, such that S's proceeding in way W represents its being the case that h, that is, represents the world's or the situation's including an instance of the state of affairs h*.

Speaking of a certain sort of representing permits the requirement to be expressed succinctly.[46] This type of representing also occurs outside of knowledge contexts and is one where x can represent y even if x is not about y and not an item ordinarily called a representation.

For instance, the tree rings' being of a certain number in a cross section of a tree can represent the age of the tree in years. In explaining 'x represents y' we need to relativize this analysandum both to a contextually salient what-question concerning y, such as $Q_1$: 'What is the age of the tree in years?' and to various contextually salient propositions being justified, for example, the proposition that the growth conditions of the tree have been normal. Relative to such details, $X_1$, the tree rings' numbering n, representing $Y_1$, the age of the tree in years, is analyzable, roughly, as $SY_1$, the occurrence of a state of affairs involving $Y_1$, having an affect in a 'nondeviant' way upon $SX_1$, the occurrence of a state of affairs involving $X_1$, where this relationship makes justified to at least some degree an answer to $Q_1$ (relative to various other contextually salient propositions' being justified). Here $SY_1$ is the occurrence for n years of a certain state of affairs concerning the tree's growth, and it has had in a 'nondeviant' way[47] some affect upon $SX_1$, the occurrence of a state of affairs concerning the determinable: the-rings'-being-of-a-certain-number. For $SY_1$ was the nondeviant cause of that determinable's taking the determinate form that it did. Furthermore, this causal relationship makes justified to at least some degree—relative to various other

propositions' being justified, such as that the growth conditions of the tree have been normal—the following answer to Q1: 'The age of the tree is n years.'

Similarly, suppose that when S is the baby or family dog, $SY_2$, the occurrence of certain past relationships of it to Mommy's—or Master's—coming through the door at a certain time of day, is the (nondeviant) cause of $SX_2$, an occurrence of the creature's proceeding in a certain way, $W_2$, say, the infant's looking toward the door—or the dog's stationing itself by the door—shortly before that time of day. Relative to other salient propositions[48] being justified, this causal relationship makes justified to at least some degree as an answer to $Q_2$: 'What is some of the domestic situation?' the proposition that Mommy/Master will soon appear. So $X_2$, S's proceeding in way $W_2$, represents $Y_2$, the impending domestic situation's including an instance of Mommy's/Master's appearing. (In such examples, S has the power spoken of in requirement (R) even before proceeding in this way, e.g., while dozing or resting at a somewhat earlier time.)

The need for a further requirement in the analysis is revealed by considering how the satisfaction of (R) explains why it is metaphorically appropriate to speak of some inanimate things as knowing, for example, to speak of the electronic door-opening equipment as knowing that something is coming up to the door. The equipment has the power to proceed in way W: exerting a force that opens the door, and $X_3$, its proceeding in this way, represents $Y_3$, the doorway situation's including an instance of the state of affairs of something's coming up to the door. This is because $SY_3$, something's actually coming up to the door from, say, off the street, being nondeviantly the cause of $SX_3$, the equipment's actually exerting a force that opens the door, justifies to at least some degree as an answer to $Q_3$: 'What is some of the doorway situation?' the proposition that the situation includes something's coming up to the door from off the street. This is relative to other contextually salient propositions being justified, for example, concerning the function of the equipment and its being in working order.

But because such a knowledge ascription to the equipment is only metaphorical, the analysis of knowing that will need a further requirement, which is satisfied by dogs or infants but not by door-opening machinery:

(R′) S has the capacity to have a thought of an occurrence of the state of affairs h* be causally involved in S's proceeding in way W.[49]

This capacity to have reality[50] in mind when proceeding is manifested as an infant matures by the development of a corresponding power or ability. The manifesting of the latter power may then be partly involved in S's asserting that P to other inquirers. Brutes such as dogs may fail to form epistemic communities but come along as free riders to knowing, provided that they can have thoughts and the capacity mentioned in the above requirement.[51]

Thus, the requirements for knowing are indeed satisfied by Radford's case of

unwitting remembrance. There S displays the power to proceed in way W4: giving the answers that were mostly accurate and later seeming to recollect having studied such matters. So X4, S's proceeding in this way, represents Y4, those having been the dates concerning the relevant historical period, because SY4, S's having actually been given lessons that included those having been the dates, was nondeviantly the cause of SX4, S's actually proceeding in way W4.[52] This causal relationship justifies to at least some degree as an answer to Q4: 'What was the historical situation during that period?' the proposition that it included most of those dates concerning the relevant matters. Such justification is relative to other propositions being justified, for example, that S's memory and communicative skills are working normally, or that what people's memories are from their having been taught lessons tends to include materials included within the lessons.[53] But the conflicting intuitions of others may instead be taking the context to be concerned with the species of S's knowing that h of special interest in most philosophical discussions.

## Knowing That as a Species of the Preceding Genus

That species has been the sort which does involve, in part, S's being in some important way justified in believing or at least accepting that h, and which views S as, at least ideally, being positioned in various ways as a potential cooperating member of an epistemic community. Let us call this species discursive knowledge.[54]

A cognitive goal of great importance is developing explanations of various things, but our interest in explanation is infused with our interest in truth,[55] so that we count explanations as deficient when they contain falsehoods at various sorts of locations. A careful development of this point concerning epistemological explanations of why various factors justify various propositions yields a solution to the Gettier problem, under at least one understanding of the latter label.

To speak of justification brings into play considerations about the manifesting of rationality. Although no brief characterization of rationality is possible here, I view it (cf. 1983) as a complex interrelationship of cognitive powers and susceptibilities including ones pertaining to cooperative inquiry within epistemic communities and the pursuit of goals, quite likely evolved, and about which we can learn more through long-term empirical research.[56] To speak of the proposition that h as justified is to say that the rationality of members of a contextually

relevant epistemic community would be more fully manifested in relation to epistemic goals by members accepting the proposition that h instead of accepting competing propositions and instead of withholding acceptance of any of these propositions. I have suggested that by taking scientific methodology as our best present guide to what it is like for rationality to be manifested, we may deal with examples of the social aspects of knowing. Indeed, it will help us to distinguish many of the examples considered above of knowledge versus ignorance.

An analysis of discursive knowledge that h will need to include not only a consideration of explanations of what makes the proposition that h justified, but also explanations of what makes the propositions in those explanations justified, and so on. In other words, the analysis will need to consider a kind of chain of explanations of justification.

This perspective may be combined with a definition of the type of chain of explanations mentioned above, which I shall call a justification-explaining chain, in order to analyze the nature of discursive knowledge as follows:

S knows ['discursively'] that h if and only if

(i) h, and
(ii) S believes/accepts[57] that h, and
(iii) the proposition that h is justified, and
(iv) S's believing/accepting that h is justified in relation to epistemic goals either through S's grasping portions of a justification-explaining chain connected to the proposition that h or independently of anything making it justified.

The technical term, 'justification-explaining chain' ('JEC' for short), which I have employed in order to abbreviate the wording of condition (iv) requires a complex definition, which fixes locations of a type where we generally wish to prohibit falsehoods when giving explanations:

By stipulation, let 'a justification-explaining chain connected to the proposition that h,' mean the following:
an ordered set of propositions such that
(a) the first member, $m_1$, of the set is a true proposition of the form:

'$f_1$ and that makes the proposition that h justified,'

where the proposition that $f_1$ describes something sufficient to make the proposition that h justified; and
(b) for any member, $m_j$, the successor of $m_j$ is determined as follows:
(i) there is no successor of $m_j$ if and only if $m_j$ is justified independently of anything making it justified;

(ii) when $m_j$ is justified only because something makes it justified then the successor of $m_j$ is a true proposition of the form:

'$f_{j+1}$ and that makes $m_j$ justified,'

where the proposition that $f_{j+1}$ describes something sufficient to make $m_j$ justified; and

(c) each instantiation for $f_j$ is a disjunction of conjunctions of propositions that take any of the forms described below (allowing disjunctions and conjunctions to contain only one member):

(1) '$k_2$ describes evidence for $k_1$,'

(2) '$k_2$, and $k_2$ entails $k_1$,' where $k_1$ does not entail $k_2$,'

(3) '$k_i$ describes evidence for $k_{i-1}$, and $k_{i-1}$ describes evidence for $k_{i-2}$, and . . . , and $k_3$ describes evidence for $k_2$,' where $3 \leq i$,

(4) '$k_2$ entails $k_1$,' where $k_1$ does not entail $k_2$,

(5) a form described as in any of (1) through (4) but with phrases of one or more of the following types substituting at one or more places in the description for the phrase, 'evidence for':

'good evidence for,' 'evidence of such-and-such a strength for,' 'something that justifies,' 'something that justifies to such-and-such a degree,'[58]

(6) any form other than one logically equivalent to a disjunction of conjunctions of propositions that take any of the above forms (allowing disjunctions and conjunctions to contain only one member); and

(d) for any one of $k_1, k_2, \ldots, k_n$ that is false, some member of the ordered set: $m_1, \ldots,$ entails that it is false.[59]

Deferring for the moment an explanation of what it is for S to grasp portions of such a chain, we may note that in the case of genuine knowledge involving Mr. Havit, we can suppose that a JEC might begin as follows:

($m_1$) Mr. Havit, who is in the office, owns a Ford; and that entails that $P_3$: 'Someone in the office owns a Ford,' and (all) that makes the proposition that $P_3$ justified.[60]

The second member of the chain, $m_2$, will then describe something sufficient to make $m_1$ a justified proposition, which will include the proposition that evidence E was given by Havit to S.

In contrast, no genuine JEC can even begin in the following, analogous fashion regarding any of the Nogot cases, except for the case of lucky Mr. Nogot:

($m_1'$) Mr. Nogot, who is in the office, owns a Ford; and that entails that P3: 'Someone in the office owns a Ford,' and (all) that makes the proposition that P3 justified.

This contains a falsehood at a proscribed location in all but the lucky Nogot case, since it is false that Mr. Nogot, who is in the office, owns a Ford. And there is no apparent alternative JEC in those cases that escapes such difficulties. Even in the lucky Mr. Nogot case, the second member, $m_2$, of a chain beginning in this fashion would contain a falsehood when maintaining that it is the evidence presented to S that makes the first conjunct of $m_1'$ justified. What makes it justified is, instead, evidence of which S is oblivious concerning the results of the lottery draw.[61] And no alternative, genuine JEC is apparent.

What it is for S to grasp a member of the chain, for example, the proposition that K, is for S to know that K as an instance of knowing taken as a broad category. In knowing that h, S will grasp in this manner sufficient portions of such a chain to render S's believing/accepting that h justified when, roughly, it is in virtue of grasping the portions that S does that S possesses the representational power mentioned in (R).[62] This ensures that discursive knowledge is a species of the broader genus of knowing.

## Application to Further Examples

Little Lord Truetemp lacks discursive knowledge as to his body temperature because he does not grasp any portion of a JEC related to the proposition that specifies the temperature. Nor does he even have knowledge as a broad category as to the temperature, since he does not manifest the power to proceed in a certain way when the implanted device makes him have a belief. We move beyond the mere susceptibility to have a belief in the case where brain damage causes S to have a seeming recollection of having been taught that P13 : 'S has brain damage,' since in this case S does proceed to accept that P13 in response to that flimsy evidence. Yet it violates the methodology for more fully manifesting rationality by members of the relevant epistemic community related to S if they accept a proposition affirming that something happened simply on the basis of someone's seeming recollection produced by brain damage. So no candidate for $m_1$ in this case is apparent, since it cannot contain the proposition that S's seeming recollection is part of what makes the proposition that P13 justified.[63]

In the case of the sports fan's surmise, S's proceeding to make the inference that S does on the basis of fragmentary recollections does not follow the methodological principle, adopted by members of an epistemic community for more

fully manifesting rationality, to check records when in doubt before accepting something as historical fact. So if one includes in $m_i$ the proposition that S made this inference, such a proposition will not help to render justified the particular proposition that S surmised to be true. So S grasps no members of a genuine JEC related to the latter proposition.

In the barn facsimile case, no genuine JEC is present because the way things look to S does not render the proposition that P4: 'That is a barn,' justified. The reason, very roughly, is that it violates the methodology of the epistemic community to treat a person's accepting that h on the basis of observation when there is—so far as the epistemic community's information is concerned—significant risk of the person's failing to discriminate between the involvement of one thing in the state of affairs h* from an alternative. But, of course, this rough remark does not try to say what makes the risk significant. But at least my account is no worse off than others that face the issue of delineating relevant alternatives.

Methodological considerations about the manifesting of rationality in the acceptance of propositions while pursuing epistemic goals may help to explain the disagreement of intuitions concerning the newspaper example. Those who regard S as having knowledge of the assassination may be responding to the principle to avoid relying on testimony motivated by an intent to deceive, while those who regard S as lacking knowledge may be responding to the principle to sample widely concerning putative eyewitness testimony from sources that have been reliable. They may further be realizing that S and those around S are not in an easy position to screen for deceit in the relevant testimony by following any obvious methodological principles.[64]

Let us assume that the mental supervenes upon the material in such a way as to allow us to attribute instances of believing/accepting to the emerging Swampman, for example, the belief that P17: 'Stanford is a university in California.'[65] But does he also know that P17? Perhaps we can call what is registered within him the information that P17, but even so, it is hardly a memory-trace. Nonetheless, relative to the way in which we are thinking of the example, against a background where we take the proposition to be justified that the mental supervenes on the material, and we imagine it to be a justified proposition that the exact duplication of Davidson has occurred, we can attribute to Swampman both the power to proceed in a way that represents Y17, Stanford's situation's including an instance of the state of affairs P17*, and the capacity to have a thought of P17* involved in such a way of proceeding. For Swampman is able to proceed by W17, drawing upon the registration of the information so as, for instance, to articulate the information to himself or to others upon being asked what Stanford is. Here X17, such articulation, represents Y17, because SY17, the occurrence of P17*, is nondeviantly the cause of SX17, the occurrence of such articulation, and this justifies to at least some degree the answer that P17 to the question, 'What is the situation

concerning Stanford?' (relative to the justified status of the propositions mentioned above and the proposition that Donald Davidson himself justifiably accepted that P17 at the time of the duplication).

But Swampman at most knows that P17 as an example of knowing taken as a broad category. He lacks discursive knowledge that P17 because his believing/accepting that P17 fails to be justified. Another such example is one described by Stewart Cohen:

> The Sole Ponderer: S knows that P18: 'S is the only member of the epistemic community who will ever accept a proposition that mentions the proposition that q,' where the proposition that q can be any proposition whose truth makes it true that P18. (cf. 1985, 527)

The example does not involve discursive knowledge, because it occurs in a context devoid of what Lehrer calls "critical discussion and confrontation in cognitive inquiry" (1970, 9) since the truth of the proposition that P18 entails that no alternative propositions compete with it for acceptance by members of the epistemic community.

Finally, the present approach can deal with Millikan's knowledge that H (whatever is the content of the proposition that H), gained partly thanks to his having accepted that P15: 'The charge of the electron is n' (where for simplicity we ignore the relevant ranges of error). The fact that E: 'Millikan obtained the experimental data that he did in the fashion that he did' is part of what makes justified the true proposition that C: 'The proposition that P15 counts as a justified proposition relative to the scientific community of Millikan's day'. This connection is part of considerations that make justified the true proposition that T: 'The charge of the electron is reasonably/quite/significantly close to n'. One JEC connected with the proposition that H includes the proposition that T, as well as the propositions that C, that E, and the following proposition, that Q: 'The proposition that H is rationally inferable in the fashion followed by Millikan from the proposition that P15.' The JEC will mention the existence of an argument paralleling Millikan's inference to H, in which the proposition that T figures in place of the proposition that P15. Since Millikan did justifiedly accept at least the propositions that C, that E, and that Q, such a grasp of a portion of the JEC was sufficient for him to have the representational power mentioned in my analysis of his knowing that $H^{66}$, where his having accepted the proposition that H represents the obtaining of state of affairs $H^*$.

## A Symbiotic Theory of Knowing

One reason that we are willing to treat discursive knowledge as constituting a species of knowing as a broad category is that infants typically grow up to become

members of epistemic communities to which ascriptions of the more complex type of knowing is relative. A second reason is that in providing an analysis of discursive knowledge, we needed to mention some states belonging to the genus, without implying that they belong to the narrower species.

Since the importance of a proposition's being justified through input from members of epistemic communities helps to explain the need for requirement (R′) in the analysis of knowing as a broad category, and since the latter type of knowing is mentioned in the analysis of discursive knowledge, we may say that the analysis of the genus and the analysis of the species stand in a kind of symbiotic, but not viciously circular, relationship.[67]

## NOTES

1. Philosophers generally agree that 'People used to know that the earth is flat' is merely elliptical for 'People used to think they knew that the earth is flat.'

2. Dretske points out, roughly, that 'Fred is chopping down the cherry tree' will in one context make the claim that it is Fred (in contrast to others) who is chopping down the cherry tree, in another context make the claim that the cherry tree (rather than something else) is what it is that Fred is chopping down, and in yet another context will make the claim that chopping down (rather than doing something else) is what Fred is doing to the cherry tree.

3. For more discussion of the nature of an analysis see Shope 1999 and Zagzebski 1999.

4. The example has a history of discussion too complex to summarize here. For a consideration of some of it, see Shope 1983, 180–181.

5. According to Cohen, scenario (2) provides reason to suppose that S has a disposition to feel, for example, that such-and-such a monarch reigned at such-and-such a date, although that disposition is abnormally inhibited, so that the feeling does not arise in S. And Cohen argues that the concept of believing that h is just the concept of having a disposition to feel that h. So Cohen denies that scenario (2) offers a case where S fails to believe the relevant facts. Cohen suggests that "it is because beliefs are dispositions to have certain feelings that they can vary in strength with the intensity of those feelings" (115).

Yet there is a disanalogy here with a disposition such as great fragility, which does not concern breaking more, as well as a disanalogy with a substance's strong disposition to explode, which does not concern more violence in exploding. Moreover, Cohen offers no hint of why he regards it as plausible to attribute the disposition in question to S in scenario (2). He does not think that S's voicing of answers entails the disposition, since he thinks that in order to permit attribution of beliefs to infants and animals, we do not conceptually require that belief-feelings be embodied in linguistic utterances, not even in subvocal ones (cf. 8). And even though he grants that it may be a psychological fact that most human belief-feelings are linguistically embodied, that differs from the inference from utterance to belief that Cohen makes regarding scenario (2). Nor do we

find a clear indication of how to explain what inhibits the manifestation of S's supposed disposition by consulting the list of factors that Cohen offers of reasons why feelings sometimes do not occur that normally would exemplify such a disposition. The only factor on Cohen's list that might initially appear relevant to scenario (2) is that a person may "have difficulty in remembering" that h (7). But to have difficulty remembering requires that one is either trying to remember or at least wants to remember, and such details are absent from Radford's example under either scenario.

6. This problem may also arise for Lehrer's explanation of conflicting intuitions (cf. 2000, 36–37).

7. White proposes that philosophers typically have not noticed that they have drawn the conclusion that if S knows that h then it is true that h from the combination of two premises: (i) If S knows that h then h; (ii) If h then it is true that h. What follows from 'S knows that h' alone, according to White, is that h is so—that is, that h is the case (cf. 1982, 60).

8. As a persuasive example, he mentions that as flames flicker up, one's knowing the house is on fire may force itself on one's involuntary awareness but acceptance may or may not come later; again, a self-deceived person "may really know that not-p even though out of shame, say, or vanity, he continues to premise that p . . ." (99).

9. Examples that may only involve absence of belief are refusing to believe what one has proved and being unwilling to believe what one has proved. More such examples, pertinent even to the absence of acceptance, may be found on a list offered by White of how various factors can account for one's not believing that one knows that h when one does know that h and may even cease to believe that h: (5) What is known is minor and has been quite often not recalled; (6) What is known came to be known far back in childhood and can be retrieved only through hypnotism; (7) One has forgotten the circumstances in which it was learnt that h; (8) One is a witness in the shock of the moment who knows more than one thinks one does; (9) One has been subject to lengthy browbeating or cross-examination or ingenious arguments aimed at getting one to doubt that h; (10) There is intricate detail in the issue of whether h; (11) The issue of whether h has been presented in an unfamiliar guise (cf. 83–94).

Another type of challenge to a belief requirement for knowing that, at least when the requirement is combined with the presumption that knowing is a special type of believing, is that it makes sense to say things of believing that do not make sense to say of knowing. White's examples include our readiness to speak of correctly, firmly, hesitatingly, or reluctantly believing that such and such (cf. 95). For a way to reconcile such linguistic details and numerous others with a belief requirement freed from the presumption in question, see Shope 1983, 171–178.

10. Variants of the condition speak not of being justified in believing that h but of having adequate evidence, or of having the right to be sure, or of it being evident that h, or certain that h.

11. An even earlier example rather like the coins in the pocket was offered by Bertrand Russell (1948) but provoked little discussion: S has true belief as to the time by looking at a clock that, unsuspectedly, stopped twelve hours earlier. Russell did not himself comment on its being justifiable, say, because of past experience, for S to hold this belief. For possible doubt concerning such justification, see Shope 1983, 20.

12. I owe this point to Jason Kawall.

13. The example originated with Carl Ginet and was reported by Alvin Goldman (1976, 772–773).

14. Some exceptions are O. A. Johnson 1971 and 1980 and Robert Almeder 1974. For discussion, see Shope 1983 and Almeder 1992.

15. Or at least that each have a common cause, as when fire causes smoke that causes one to believe there is fire.

16. For details and a way to avoid such modal terminology, see Shope 1999.

17. For a survey and discussion of some interpretations see Shope 1983, 192ff.

18. An analogous version of Gettier's coins in the pocket example was described by George Pappas and Marshall Swain (cf. 1978, 20).

19. Indeed, adults may sometimes intentionally trick children by convenient deceptive appearances in a fashion resembling that of Lehrer's tricky Mr. Nogot, in order to more quickly and easily let a child know various things: feigning pain after a blow from the child, for instance, to let the child know that even mild blows can cause distress. But this concerns knowing as a broad category. Once adults are engaged with one another in full inquiry aiming at truth, a concern shifts to a species of this genus which, for reasons to be sketched below, excludes the tricky Nogot cases from belonging to this species.

20. D. Goldstick may have been the first to raise this issue (cf. 1972, 244).

21. A similar reversal can be made to occur by changing the level of specificity in the description of circumstances under which a process occurs, and it will not be altered simply by treating circumstances as an aspect of a process. See for example the case of the pointed to sheep in Paxson 1974.

22. And perhaps Goldman will regard the appearance of the name of cities other than Barcelona on S's list in Gettier's second example as making Brown's being in one of those other cities a relevant alternative.

23. For instance in the case of the retina-rotting drug, where an experimental drug momentarily restores sight briefly enough for S to know something by looking at his surroundings but then destroys his retinas (cf. Morton 1977, 58).

24. Another type of counterexample is when S knows that P11: 'Some of my belief's about beliefs are ones that I might not have had.' Satisfying the antecedent of any of the above conditionals guarantees that its consequent will not be satisfied, since it guarantees that S cannot but retain the belief that P11.

25. Nozick adds another conditional requirement for knowledge and speaks of S as 'tracking the truth' when both conditionals are satisfied. For discussion see Luper-Foy 1987; Shope 1984; Sosa 1996.

26. At places, Castaneda misleadingly omits the qualification, 'S's determining.' But it is needed to cover the presence of r1, the typographical error, and r2, S's eyestrain, in the case of the careless typesetter, where S fails to believe these abnormalities are present. I overlooked this in Shope 1983 and misstated the requirement that S believes that z.

27. Perhaps Castaneda would hope to explain in a similar way the contrasting intuitions that have arisen concerning the newspaper example.

28. Another argument that Castaneda offers for his multiple-species thesis presupposes the correctness of his analysis of knowing that and then points to its referring to S's believing that z. Castaneda suggests that to shift the background conditions specified within the proposition that z will be to move from a consideration of one species or type of knowing to another. But this invokes an extremely broad use of the term 'type'

and by itself does not provide motivation to posit a shift from one meaning of 'knows that' to another. Nor does it render tricky Mr. Nogot cases irrelevant as counterexamples to Castaneda's analysis.

Castaneda is comfortable with the fact that his analysis of knowing that implies that S cannot know that z in the same sense of 'know that' in which S knows that p (cf. 1980, 223). For instance, in saying, 'I know that the mechanism for picking a winner in the lottery involves such-and-such regularities and I know that last night's winning number was so-and-so,' one is supposedly shifting from one meaning of 'knows that' to another. In order to allow that young children and some brutes can have knowledge, Castaneda was led to reduce his initial requirement that S believes that z to the requirement that S at least "takes for granted" that z, where taking for granted does not require believing and can even be "inarticulable" (1989, 237). But since the proposition that z apparently concerns in part what removes nomological guarantees, it is puzzling how very young children or animals could have such a concept, and if they cannot, puzzling what taking z for granted can be for them.

Castaneda's analysis is able to deal with the case of the sports fan's surmise to the extent that he adds an additional requirement concerning methodological restrictions on forming beliefs.

29. For discussion of some of it, see Shope 1983; forthcoming.

30. But Alvin Plantinga (1996) points out that a defeasibility condition might instead focus on S's believing that h being reliably produced, or its being produced by properly functioning cognitive faculties, or its being appropriately coherent, or on still other candidates for A.

31. But for fuller clarification and illustration of them, see Lehrer's own presentation (2000).

32. For brevity, I shall henceforth suppress the temporal references.

33. This is because Lehrer distinguishes accepting that h from believing that h and treats the former as a functional state of, among other things, being prepared to infer in accordance with the assumption that h (cf. 2000, 39–41).

34. For discussion see Shope 1983, 195–196.

35. John Greco (1999) suggests that we widen this detail to include not just cognitive virtues but any normative property of S.

36. Moreover, Sosa suggests that exercising virtue pertains to accomplishing a normally desirable sort of thing (cf. 1996, 273). Sosa's frequent mention of being "right" in believing may also be taken as retaining some normative element in spite of its close tie to believing truly.

37. Sosa points out that if we take an analogous approach to all virtues, then even as a baby Chris Evert had the virtues of a tennis player (cf. 285). This is close to what I have called the problem of newly acquired abilities (cf. 1999, 64).

38. Sosa has recently (2001) endorsed the position that Swampman counts as having knowledge.

39. Since the testifier might be relying on another testifier, this last condition may more appropriately be worded by making the analysis recursive.

40. She says (cf. 1999, 108) that we can stretch the boundaries of the analysis to include children who are in the course of training to acquire cognitive virtues. But has such training begun for infants? for dogs? even for wild dogs?

41. For similar reasons, the use of conditionals may also mar Zagzebski's analyses of

justification. Perhaps she has indicated a way to avoid this concern by revising the wording of condition (2) so as to pick out the specific intellectual virtue the act manifests and requiring not merely that the act is of a type that persons with that virtue would probably do but that it is also "an act that is a mark of the behavior of persons with that virtue" (1999, 108).

42. For analogous cases see Peter Klein 1996, 105, and Richard Feldman 1996, 217–218.

43. Suppose that Plantinga were to alter his definition of favorability so that X becomes the conjunction of all factors undetectable through E. That may leave the account too weak to rule out tricky Nogot cases, where the undetectable effort to trick is conjoined with the undetectable goal of Nogot's neurosis to install some true belief. It would also make the account too weak to rule out knowledge in a case where Tom Grabit actually has an identical twin who was in the library but who abhors theft. Plantinga himself says that it is not clear whether the following case is a counterexample: one believes there is a vase in a box only because of seeing its reflection in a cleverly placed mirror (cf. 1996, 329).

44. A naturally occurring analogous case is one in which S is not fatigued but is unable to discern that she is coming down with a certain illness and that it is the illness which causes her present feelings of fatigue. On the basis of the latter evidence, she forms the true belief that rest would help her feel better. As a matter of fact, which is also undetectable by her, the illness's symptoms are always greatly mitigated by immediate rest.

45. Exactly what Plantinga thinks about this case is unclear (cf. 1996, 377n 48). He does maintain that the undesigned Swampman is not really possible and so is no counterexample (cf. 1991). But for a counterexample that Plantinga's Christian beliefs may prevent him from holding this to be impossible see Shope forthcoming.

46. For present purposes, speaking of this type of representing can be treated as using technical terminology in order to simplify expression of the analysis of knowing that. But for some reasons to regard it as characterizing one thing that we do ordinarily speak of as representing, see Shope 1999.

47. Characterized in terms of the exclusion of both excessive generative potential and excessive receptivity; see Shope 1999.

48. Including, perhaps, some concerning the basic process of operant conditioning and some concerning the tendency of owners/parents to be regular in habits concerning pets/offspring.

49. There may be reasons (cf. Shope, manuscript) for casting the resulting analysis in a recursive form.

50. Or at least h*. See note 61 concerning the possibility that h* is a normative state of affairs.

51. The relevance of a salient what-question to representing something to be the case, and derivatively to knowing something to be the case, might mislead one into accepting Alan R. White's position that to know that P is to be able to give an answer, namely, that P, which is the correct answer to a possible question (cf. 1982, pp. 119–120; and cf. E. Craig 1990). The dog and infant do manifest knowledge but not by producing it in the sense of displaying the answer to a question. Since they proceed in a way referred to in (R) as a consequence of the earlier events that I have mentioned, they might be said to have shown what some of the domestic situation is and perhaps be

said to have yielded an answer to $Q_2$. But they still have not given an answer to a question, not even nonverbally. Hector Neri Castaneda insists (1980, 219–221), but without much supporting argument, that such brutes and infants do have questions arise in their minds and pose answers to them, and he considers possession of this power to be one kind of knowing.

52. In this example, $Y_4$ is involved in $SY_4$ as an intentional object. For discussion of such a detail concerning representing, see Shope 1999.

53. There are reasons (cf. Shope manuscript) for concluding that knowing as a broad category will require an analysis taking a recursive form, rather than merely including the conjunction of a truth condition with requirements (R) and (R'). Because of this, we cannot say that knowing is the representational power and cognitive capacity mentioned in those two requirements, but we can regard it as a state whose embodiment at least always partly involves their presence with respect to some states of affairs.

54. Lehrer (2001) suggests this label. Because I did not wish to become sidetracked into a consideration of whether certain normative statements, e.g., moral claims, have truth values akin to the way in which nonnormative or 'factual' statements do, in earlier discussions of the species of knowing especially pertinent to inquiry and debate within epistemic communities, I restricted attention to nonnormative propositions as instantiations for 'h' and spoke technically of the species as justified factual knowledge. But this restriction can now be avoided by the decision indicated above to articulate a so-called 'truth' condition without employing the word 'true' and phrasing the condition simply as requiring that h.

55. And in what is appropriately acceptable: see note 61.

56. For a related attitude concerning rationality, see Nozick 1993.

57. I am leaving unresolved the question of whether this detail should remain disjunctive or should speak only of acceptance, as well as leaving open whether the accounts of acceptance given by L. J. Cohen 1992 and by Lehrer 2000 are significantly different.

58. This list of substitute phrases is meant to cover all the ways in which propositions become, in the usual philosophical terminology, 'reasonable,' 'acceptable,' or 'evident.' If it does not, then further appropriate phrases should be added to the list.

59. Cf. Shope 1983, 209–211. Some may wish to regard normative statements, including ones such as, 'I know that he's a very funny man,' as true, yet to regard 'He's a very funny man' as having no truth value because there is no fact of the matter about what is humorous. Nonetheless, there are contextually varying rough standards of humor that are relative to various groups. So we could change the definition of a JEC so as to be relative to such considerations by replacing a phrase such as 'true proposition' with the phrase, 'proposition that is true or, if lacking a truth value, is appropriately acceptable,' and replacing phrases speaking of a proposition as being false with phrases speaking of a proposition that is false or, if lacking a truth value, is such that its denial is appropriately acceptable.

60. An alternative way to begin a JEC chain related to the proposition that $P_3$ is the following (once appropriate details are filled in):

($m_1$) Mr. Havit, who is in the office, has behaved in such and such a manner and has been generally reliable; and (all) that makes the proposition that $P_3$ justified.

Another alternative is the following:

($m_1$) There is a fact that entails that someone in the office owns a Ford; and that makes the proposition that $P_3$ justified.

61. I have suggested (1983) restricting the label, 'Gettier-type case,' to examples where the three conditions of the standard analysis are met but all apparent candidates for a JEC related to the proposition that h contain a falsehood at one of the proscribed locations and so are mere pseudochains. Roderick Chisholm 1989 also proposes to block Gettier-type examples by focussing on the role of falsehoods. For objections, see Plantinga 1993a, 63, and Shope 1998; Jason Kawall has pointed out to me that Chisholm will also not be able to admit the presence of knowledge in cases resembling Hilpinen's example about Millikan.

62. An analysis of how S's belief that h (or acceptance of the proposition that h) becomes justified through grasping in this fashion some portions of a JEC would then complete the clarification of the analysans (see Shope manuscript).

63. Paul Moser (1989) has objected to my analysis by describing the case of the hypnotized, lucky Mr. Nogot, exactly like the case of lucky Mr. Nogot, but where Nogot's behavior in the office is only the unwitting carrying out an order of a hypnotist to engage in such behavior when out of the trance. But here what S grasps is not enough to make the proposition that $P_3$ justified, for it includes Nogot's testimony, that T, where the proposition that T fails to be justified because acceptance of it by members of the epistemic community violates the basic methodological principle to avoid trusting reports that are not issued as part of a relevant inquiry.

In none of the cases of ignorance considered thus far in this section is there even a basis for treating S as proceeding in a way that generates any degree of justification for an answer to a salient what-question, and so there is no reason even to grant S knowledge belonging to the broader category.

64. Yet there are many interesting details that need discussion concerning this case and ones that resemble it in a variety of ways (see Cohen 1986; Shope 1983; manuscript).

65. Fred Dretske's account of representing (1988) will not allow this. For discussion, see Shope 1999, 249–251.

66. Yet to show this might involve spelling out controversial details concerning how Millikan comes to accept the proposition that H so that these details link up with the justificational considerations connected with representing that pertain to satisfaction of requirement (R).

67. Also see Sosa 1991 on the relationship between what he calls animal knowledge and what he calls reflective knowledge, as well as Lehrer's contrast (2001) between what he calls primitive knowledge and discursive knowledge.

It is an advantage of an account of knowing that for it to be able to be related to an account of knowing how to do something in such a way as to help us to understand the appropriateness of employing the word 'knowing' in both contexts. For a consideration of how this may be done for the account of knowing that defended here, see Shope (forthcoming; manuscript).

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