

EPISTEMIC CLOSURE AND SKEPTICISM

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ABSTRACT: Closure is the epistemological thesis that if S knows that P and knows that P implies Q, then if S infers that Q, S knows that Q. Fred Dretske acknowledges that closure is plausible but contends that it should be rejected because it conflicts with the plausible thesis: Conclusive reasons (CR): S knows that P only if S believes P on the basis of conclusive reasons, i.e., reasons S wouldn't have if it weren't the case that P. Dretske develops an analysis of knowing that centers on CR, and argues that the requirement undermines skepticism by implying the falsity of closure. We develop a Dretske-style analysis of knowing that incorporates CR, and we argue that this analysis not only accords with closure, but also implies it. In addition, we argue that the analysis accounts for the prima facie plausibility of closure-invoking skeptical arguments, and nonetheless implies that they are fallacious. If our arguments turn out to be sound, the acceptability of Dretske's analysis of knowing will be significantly enhanced by the fact that, despite implying closure, it undermines closure-based skepticism.

KEYWORDS: knowledge, closure, conclusive reasons, skepticism, Dretske

1. Introduction

It seems clear that deductively valid inferences from known premises can usually augment knowledge. For example, if S knows that a certain animal, X, is a zebra, and S knows that X's being a zebra implies X's being a mammal, S can acquire inferential knowledge that X is a mammal. Closure is the epistemological thesis that such augmentation of knowledge is always possible:

Closure: If S knows that P and S knows that P implies Q, then if S infers that Q from the premises that P and that P implies Q, S knows that Q.¹

¹ Fred Dretske formulates the thesis in the following way: "Closure is the epistemological thesis that if S knows that P is true and knows that P implies Q, then, evidentially speaking, this is enough for S to know that Q is true." (Fred Dretske, "The Case against Closure," in *Contemporary Debates in Epistemology*, eds. Matthias Steup and Ernest Sosa (Malden: Blackwell, 2005), 13.) In this paper, we focus on versions of closure that at least implicitly

According to Fred Dretske, "... closure sounds like an eminently plausible principle. Everything else being equal, then, we ought to keep it. But everything else *isn't* equal."² He contends that closure conflicts with the following plausible thesis:

Conclusive reasons (CR): S knows that P only if S believes P on the basis of *conclusive reasons*, i.e., reasons S wouldn't have if it weren't the case that P.³

"If knowledge is belief based on the kind of conclusive reasons I describe in Dretske (1971) ..., then closure fails. Things turn out this way because one can have conclusive reasons ... for P ... without having conclusive reasons for known consequences of P."⁴ For example, it seems plausible that one can have conclusive reasons for believing that the animals one sees in the zebra pen of a zoo are zebras without having conclusive reasons for believing "that these animals are not mules cleverly disguised by the zoo authorities to look like zebras."⁵ Dretske develops an

involve competent inference, as these versions seem to be the most plausible ones. For present purposes, closure is to be construed as: If S knows at (time) T that P and S knows at T that P implies Q, then if S competently infers at T that Q immediately from the premises that P and that P implies Q, S knows at T that Q. See, e.g., John Hawthorne, "The Case for Closure," in *Contemporary Debates in Epistemology*, eds. Matthias Steup and Ernest Sosa (Malden: Blackwell, 2005), 29, and Timothy Williamson, *Knowledge and Its Limits* (Oxford: Oxford University Press, 2000), 117, for discussion of the role of competent inference, and see, e.g., Steven Luper, "The Epistemic Closure Principle," *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Summer 2010 Edition), <http://plato.stanford.edu/archives/sum2010/entries/closure-epistemic/>, for discussion of different versions of closure and for references to relevant literature.

² Dretske, "Closure," 18.

³ For present purposes, CR is to be construed as: S knows that P only if S believes P on the basis of one or more reasons, R, that are such that R wouldn't be the case if it weren't the case that P. The notion of believing something *on the basis of a reason* will be explicated in Section 2. S will be said to *have* a reason, R, for believing P iff R is the case and R is at least one of S's reasons for believing P.

⁴ Dretske, "Closure," 19. For Dretske's views regarding closure and the conclusive reasons requirement, see, e.g., Fred Dretske "Epistemic Operators," *Journal of Philosophy* 67 (1970): 1007–1023, "Conclusive Reasons," *Australasian Journal of Philosophy* 49 (1971): 1–22, "Contrastive Statements," *Philosophical Review* 81 (1972): 411–430, "Closure," and "Reply to Hawthorne," in *Contemporary Debates in Epistemology*, eds. Matthias Steup and Ernest Sosa (Malden: Blackwell, 2005), 43–46.

⁵ Dretske, "Operators," 1016.

analysis of knowing that centers on CR, and argues that the requirement undermines skepticism by implying the falsity of closure.⁶

In view of the plausibility of closure, however, Dretske acknowledges that there are substantial costs associated with rejecting it: “These costs are, I admit, significant. I would not be willing to pay this price if I thought there were alternatives that were less expensive.”⁷ We think there may be a *cost-free* way to defend CR. In this paper, we develop a Dretske-style analysis of knowing that incorporates CR, and we argue that this analysis not only accords with closure, but also implies it. In addition, we argue that the analysis accounts for the *prima facie* plausibility of closure-invoking skeptical arguments, and nonetheless implies that they are fallacious. According to Dretske, rejection of closure is “not just a way to avoid skepticism (most philosophers would agree with this) but the *only* way to avoid skepticism.”⁸ If our arguments turn out to be sound, however, the acceptability of Dretske’s analysis of knowing will be significantly enhanced by the fact that, despite implying closure, it undermines closure-based skepticism.⁹

2. A Dretske-style Analysis of Knowing

We agree with Dretske that CR is plausible in its own right, independently of any capacity it may have to discredit skepticism by ruling out closure:

As a historical footnote, I wasn't led to deny closure because it represented a way around skepticism. I was led to it because it was a result of what I took to be a plausible condition on the evidence (justification, reasons) required for knowledge. If your reasons for believing P are such that you *might* have them

⁶ See Dretske, “Conclusive,” 12 ff., for his analysis of knowing, and see, e.g., Dretske, “Closure,” for his arguments against skepticism. We will use the term ‘skepticism’ to refer to the philosophical view that little or no genuine knowledge exists, and we will be concerned exclusively with closure-based varieties of skepticism.

⁷ Dretske, “Hawthorne,” 43.

⁸ Dretske, “Closure,” 18.

⁹ This paper is a product of an ongoing collaborative effort focused on issues involving knowledge, and neither of us wholeheartedly endorses all of the theses defended herein. (Indeed, some of these theses are not fully in accord with theses we defended in an earlier product of our collaboration, F. Adams, J. Barker, and J. Figurelli, “Towards Closure on Closure,” 2010 (manuscript).) Nevertheless, we think that the arguments we present for these theses constitute worthwhile contributions to current debates about the issues. In this paper, we focus on a Dretske-style analysis of knowing and on a several competing analyses that incorporate CR; in a planned sequel to this paper, we will discuss numerous competing analyses, including many that do not incorporate CR.

when P is false, then they aren't good enough to *know* that P is true. You need something more. That is why you can't know you are going to lose a lottery just because your chances of losing are 99.99 percent. Even with those odds, you still might win (someone with those odds against him *will* win). That is why you can't learn – can't come to know – that P is true if all you have to go on is the word of a person who might lie about whether or not P is so. This is just another way of saying that knowledge requires reasons or evidence (in this case, testimony) you wouldn't have if what you end up believing were false. You can learn things from people, yes, but only from people who wouldn't say it unless it were true.¹⁰

We also think that Dretske's analysis of knowing is plausible in its own right, independently of its import regarding skepticism and closure:

S has *conclusive reasons*, R, for believing P iff:

(A) R is a conclusive reason for P ...,

(B) S believes, without doubt, reservation, or question, that P is the case and he believes this on the basis of R,

(C) (i) S knows that R is the case or

(ii) R is some experiential state of S (about which it may not make sense to suppose that S *knows* that R is the case; at least it no longer makes much sense to ask *how* he knows).

With only minor embellishments, to be mentioned in a moment, I believe that S's having conclusive reasons for believing P is *both* a necessary and a sufficient condition for his knowing that P is the case. The appearance of the word 'know' in this characterization (in (Ci)) does not render it circular as a characterization of knowledge since it can be eliminated by recursive application of the three conditions until (Cii) is reached.¹¹

This analysis of knowing employs the notion of *believing something on the basis of a reason*, a notion we explicate as follows:

Epistemic-basing: S believes P on the basis of a reason, R, iff: either (i) R is at least one of S's reasons for believing P, and R is an experiential state of S; or (ii)

¹⁰ Dretske, "Hawthorne," 43-44.

¹¹ Dretske, "Conclusive," 12-13. The "minor embellishments" referred to in this passage aren't relevant to present concerns.

S's believing R to be the case is at least one of S's reasons for believing P, and S knows that R is the case.¹²

In light of epistemic-basing, the following analysis of knowing seems plausible:

Dretske-style analysis of knowing (DAK): S knows that P iff S believes P on the basis of conclusive reasons.¹³

DAK accords with Dretske's view that "S's having conclusive reasons for believing P is *both* a necessary and a sufficient condition for his knowing that P is the case."¹⁴

We argue that: (i) DAK specifies correct necessary and sufficient conditions for knowledge itself, which we refer to as *generic* knowledge; (ii) several important *kinds* of knowledge – we call them *species* of knowledge -- can be delineated by supplementing the conditions specified by DAK; (iii) distinct versions of closure hold for generic knowledge and for certain species of knowledge; (iv) closure-invoking skeptical arguments are fallacious because they exploit confusions pertaining to generic knowledge on the one hand, and to various species of knowledge on the other; (v) DAK is superior to several competing analyses, and (vi) as a result, the acceptability of Dretske's analysis of knowing is significantly enhanced.

¹² The notion of *a subject's reasons for believing something* will be employed herein as a primitive notion. We will discuss this notion, and the closely related notion of believing something on the basis of a reason, in the sequel. See, e.g., Marshall Swain, *Reasons and Knowledge* (Ithaca: Cornell University Press, 1981), for an in-depth discussion of these notions, and see, e.g., Keith Allen Korcz, "The Epistemic Basing Relation," *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Summer 2010 Edition), <http://plato.stanford.edu/archives/sum2010/entries/basing-epistemic/>, for a survey of theories about them. Epistemic-basing is an abbreviation of: S believes P on the basis of a reason, R, iff: either (i) R is at least one of S's reasons for believing P, and R consists of one or more experiential states of S, or (ii) S's believing R to be the case is at least one of S's reasons for believing P, S knows that R is the case, and *S's knowing this doesn't presuppose that P*, or (iii) R consists of a combination of reasons that satisfy the conditions specified by (i) and (ii). The function of the italicized clause in this thesis will be explained in the sequel.

¹³ DAK is to be construed as an abbreviation of: S knows that P iff S believes P on the basis of one or more reasons, R, that are such that R wouldn't be the case if it weren't that case that P. The sentential operator "if it weren't the case that P, it wouldn't be the case that Q," which is employed herein as a primitive operator, will be discussed at length in the sequel.

¹⁴ Dretske, "Conclusive," 13.

The notions of *necessary condition* and *sufficient condition* we employ can be explicated as follows: (i) its being the case that P is a *necessary condition* for its being the case that Q iff it is necessarily the case that if it weren't the case that P, then it wouldn't be the case that Q; and (ii) its being the case that P is a *sufficient condition* for its being the case that Q iff it is necessarily the case that if it weren't the case that Q, it wouldn't be the case that P. We do not presuppose that the fact that something holds of necessity implies either that it holds of *logical* necessity or that its holding is knowable *a priori*.¹⁵ Furthermore, in arguing that DAK specifies correct necessary and sufficient conditions for knowledge, we aren't attempting to challenge views like Timothy Williamson's that "the concept *knows* cannot be analyzed into more basic concepts"¹⁶ and that "the pursuit of analyses is a degenerating research programme."¹⁷ While we will follow the standard practice of referring to DAK and its competitors as *analyses of knowing*, we will take no stand in this paper on the highly controversial issues associated with the nature and prospects of so-called *conceptual analysis*.¹⁸

The principal theses we defend – that DAK implies closure and that it nonetheless undermines closure-based skepticism – seemed implausible to us in the initial stages of our investigation, and we anticipate that these theses will, at first glance, seem implausible to many of our readers. Not surprisingly, we experienced considerable difficulty in building a strong case for acceptance of the theses, and found ourselves agreeing with John Hawthorne, one of Dretske's many critics, that "if there were some easily accessible locus of reflective equilibrium in the vicinity, we would surely have reached it by now."¹⁹ Accordingly, we have

¹⁵ We do not claim that the notions of *necessary condition* and *sufficient condition* we employ are the ones that are most commonly employed by other theorists. See, e.g., Andrew Brennan, "Necessary and Sufficient Conditions," *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Fall 2008 Edition), <http://plato.stanford.edu/archives/fall2008/entries/necessary-sufficient/>, for discussion of various conceptions of necessary conditionship and sufficient conditionship.

¹⁶ Williamson, *Knowledge*, 33.

¹⁷ Williamson, *Knowledge*, 31.

¹⁸ See, e.g., Robert Shope, *The Analysis of Knowing: A Decade of Research* (Princeton: Princeton University Press, 1983), 34 ff. and Michael Beaney, "Analysis," *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Summer 2009 Edition), <http://plato.stanford.edu/archives/sum2009/entries/analysis/>, for discussions of these issues, which we will address in the sequel. See also John Hyman "Knowledge and Evidence," *Mind* 115 (2006): 891-916, for arguments against Williamson's view and in favor of an analysis of knowing that, as we will show in the sequel, resembles DAK.

¹⁹ Hawthorne, "Closure," 27.

adopted the strategy of presenting our case in a highly methodical fashion characterized by precise definitions of key terms and by argumentation that is largely formal. While we think that our arguments succeed in establishing that DAK implies closure and nonetheless undermines closure-based skepticism, we are considerably less confident that they establish DAK's superiority to its competitors. Indeed, we will end this paper with an admission that some of these competitors are, in our opinion, still in the running.

3. Generic Knowledge and Species of Knowledge

The following cases illustrate ways in which distinguishing between generic knowledge and various species of knowledge lends support to DAK and to closure, and yet serves to undermine closure-based skepticism. Jimmy and his mother, Lisa, see a certain aquatic animal, X, swimming in the ocean. Jimmy believes X to be a porpoise because it appears to him to be one; in other words, his having this experience is at least one of his reasons for believing that X is a porpoise.²⁰ Epistemic-basing implies that his belief is based on his having the experience. If X weren't a porpoise, it would be a seal, a shark, or something else that wouldn't appear to him to be a porpoise. Consequently, his having the experience is a conclusive reason for his belief, and DAK implies that the belief qualifies as generic knowledge. Now Jimmy has never seen a dolphinfish, and if X were a dolphinfish, it might appear to him to be a porpoise. Nevertheless, there are no dolphinfish in the vicinity, and if X weren't a porpoise, it wouldn't be such a fish. Knowing that X is a porpoise, and knowing that X's being a porpoise implies its not being a dolphinfish, Jimmy infers that X isn't such a fish. Does he thereby acquire generic knowledge that X isn't a dolphinfish?

Consider the plausible thesis:

Inferential-reasons: If S infers that Q from a premise that P, then at least one of S's reasons for believing Q is S's believing P.

Assuming that this thesis is true, it follows that at least one of Jimmy's reasons for believing that X isn't a dolphinfish is his believing X to be a porpoise. Since he knows X is a porpoise, epistemic-basing implies that he believes X isn't a

²⁰ The term 'because' will (almost invariably) be used in this paper to refer to a subject's *reason* or *reasons* for believing something, for intending, doubting, or wanting something, or for performing some (intentional) action. This use of the term will be discussed in more detail in the sequel. Expressions of the form 'x appears to S to be F' and 'it appears to S that x is F' will be used as equivalents.

dolphinfish on the basis of a reason consisting of X's being a porpoise. X wouldn't be a porpoise were it a dolphinfish. Consequently, X's being a porpoise is a conclusive reason for his conclusion belief, and DAK implies that the belief qualifies as generic knowledge. Thus, with the help of epistemic-basing and inferential-reasons, DAK implies closure.^{21 22}

Lisa, who is an ichthyologist, believes that X is a porpoise *rather than* a dolphinfish because X appears to her to be a porpoise. Epistemic-basing implies that her belief is based on her having this experience. X wouldn't appear to her to be a porpoise were it not one, and X wouldn't appear to her to be a porpoise were it a dolphinfish. Consequently, her having the experience is a conclusive reason not only for her believing X is a porpoise, but also for her believing X isn't a dolphinfish, and DAK implies that both of these beliefs qualify as generic knowledge.²³ Lisa's belief that X is a porpoise rather than a dolphinfish also qualifies as knowledge, for X's appearing to her to be a porpoise functions as a *differentiator*, i.e., a reason that enables her to distinguish between the competing possibilities, X's being a porpoise and X's being a dolphinfish. She possesses what we'll call *contrastive* knowledge, which we explicate as follows:

Contrastive-knowing: S knows that x is A rather than B iff x's being A entails x's not being B, and S believes that x is A and not B on the basis of a *contrastively*

²¹ The derivation of closure from DAK, epistemic-basing, and inferential-reasons will be discussed in detail in the sequel. The derivation involves the plausible presupposition that if it's the case both that P and that P implies Q, then it wouldn't be the case that P if it weren't the case that Q. In virtue of this presupposition, a stronger form of closure can be derived: If S knows that P, then if P implies Q and S infers that Q from the premises that P and that P implies Q, S knows that Q. We will discuss the role this principle plays in accounting for acquisition of knowledge via non-deductive reasoning.

²² Steven Luper has advanced a similar argument against Dretske's denial of closure: "We might insist that *p* itself is a conclusive reason for believing *q* when we know *p* and *p* entails *q*. After all, assuming *p* entails *q*, if *q* were false so would *p* be. On this strategy we have a further argument for [closure]: if S knows *p* (relying on some conclusive reason R), and S believes *q* because S knows *p* entails *q*, S has a conclusive reason for believing *q*, namely *p* (rather than R), and hence S knows *q*." (Luper, "Epistemic Closure.") Peter Klein has advanced a somewhat similar argument, although he is concerned with knowledge construed as a form of justifiable or defensible belief rather than as a form of belief based on conclusive reasons. (Peter Klein, "Skepticism," *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Summer 2010 Edition), <http://plato.stanford.edu/archives/sum2010/entries/skepticism/>.) We argue later in the paper that closure does not hold if knowledge is construed in this way.

²³ We take it for granted that her believing that X is a porpoise rather than a dolphinfish involves her believing X is a porpoise and her believing X isn't a dolphinfish.

conclusive reason, R, i.e., (i) R wouldn't be the case if it weren't the case that x is A, (ii) R wouldn't be the case if it were the case that x is B, and (iii) R doesn't entail either x's being A or x's not being B.²⁴

Since X's appearing to Lisa to be a porpoise constitutes a contrastively conclusive reason for her belief that X is a porpoise rather than a dolphinfish, contrastive-knowing implies that the belief qualifies as knowledge.

Jimmy is unfamiliar with dolphinfish, and doesn't know what such animals look like. Even though X wouldn't appear to him to be a porpoise were it not a porpoise, X might appear to him to be a porpoise were it a dolphinfish. Consequently, he is in no position to acquire knowledge that X is a porpoise *rather than* a dolphinfish. Knowing that X is a porpoise and knowing that it isn't a dolphinfish, he infers that X is a porpoise rather than a dolphinfish. His conclusion belief is not based on a reason that can qualify as a differentiator enabling him to distinguish between the competing possibilities, X's being a porpoise and X's being a dolphinfish. X's appearing to him to be a porpoise cannot qualify, for he might have this experience were X a dolphinfish. X's being a porpoise cannot qualify, for it entails X's not being a dolphinfish. Similarly, the conjunctive state of affairs consisting of X's both appearing to be a porpoise and being a porpoise cannot qualify.²⁵ Hence, he lacks a contrastively conclusive reason for his conclusion belief, and contrastive-knowing implies that he doesn't know that X is a porpoise rather than a dolphinfish. It seems plausible that only the following restricted version of closure holds for this species of knowledge:

Contrastive-knowledge-closure: If (i) S knows that x is A; (ii) S knows that x's being A entails x's not being B; (iii) S infers that x is A rather than B; and (iv) S believes x is A on the basis of a contrastively conclusive reason for believing that x is A and not B; then S has contrastive knowledge that x is A rather than B.

²⁴ This thesis is to be construed as an abbreviation of: S knows that it's the case that P rather than the case that Q iff: P entails not-Q, and S believes that P and not-Q on the basis of a *contrastively* conclusive reason, R, i.e., (i) R wouldn't be the case if it weren't the case that P, (ii) R wouldn't be the case if it were the case that Q, and (iii) R doesn't entail either P or not-Q. The function of Clause (iii) will be clarified in the next paragraph.

²⁵ In ensuring that these states of affairs cannot qualify as differentiators, Clause (iii) of contrastive-knowing helps account for the fact that Lisa's knowing that X is a porpoise *rather than* a dolphinfish constitutes an epistemic achievement that is superior to Jimmy's knowing that X is a porpoise *and not* a dolphinfish, i.e., his knowing that X is a porpoise and X is not a dolphinfish. (We don't wish to suggest that the expression 'and not' is never used in the sense of 'rather than'.)

Besides possessing contrastive knowledge that X is a porpoise rather than a dolphinfish, Lisa possesses what we'll call *experiential* knowledge that X isn't a dolphinfish – her knowledge-qualifying belief is based on a conclusive reason, X's appearing to her to be a porpoise, which consists of an experiential state.²⁶ Jimmy lacks such knowledge – X's being a porpoise, which is the only conclusive reason he has for believing that X isn't a dolphinfish, doesn't consist of an experiential state. Lisa also possesses what we'll call *defensible* knowledge that X isn't a dolphinfish – her knowledge-qualifying belief is based on a conclusive reason that makes the belief *defensible*, i.e., justifiable from her own perspective.²⁷ Jimmy lacks such knowledge – owing to his lack of familiarity with dolphinfish, his belief that X isn't a dolphinfish isn't defensible. It seems plausible that only the following restricted versions of closure hold for these species of knowledge:

Experiential-knowledge-closure: If (i) S knows that P; (ii) S knows that P implies Q; (iii) S infers that Q; and (iv) S believes P on the basis of an experiential reason that is a conclusive reason for believing Q; then S has experiential knowledge that Q.

Defensible-knowledge-closure: If (i) S knows that P; (ii) S knows that P implies Q; (iii) S infers that Q; and (iv) S believes that P on the basis of a reason that makes believing that Q defensible; then S has defensible knowledge that Q.

Some of DAK's competitors supplement CR with additional requirements that have the effect of equating generic knowledge with contrastive knowledge, experiential knowledge, or defensible knowledge. For example, the following CR-incorporating analyses of generic knowledge are competitors of DAK:

CR+contrastivity: S knows that P iff S believes P on the basis of a conclusive reason, R, that is such that, for any incompatible Q that might be the case were P

²⁶ In delineating various *kinds* (or *species*) of knowledge, we are making no claims about the existence of context-dependent variations in *senses* of the term 'know' or in *standards* for the term's applicability. Hence, we are not advocating adoption of *epistemic contextualism*. See, e.g., Patrick Rysiew, "Epistemic Contextualism," *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Spring 2009 Edition), <http://plato.stanford.edu/archives/spr2009/entries/contextualism-epistemology/>, for discussion of epistemic contextualism and for references to relevant literature.

²⁷ For present purposes, the notion of defensible belief, which will be discussed in detail in the sequel, can be explicated as follows: S *defensibly* believes P on the basis of R iff S's believing P on the basis of R would be more reasonable from S's own perspective than not doing this, were S concerned at the relevant time only with acquiring the truth regarding whether or not P by doing it.

not the case, R can qualify as a contrastively conclusive reason for believing P and not-Q.²⁸

CR+experientiality: S knows that P iff S believes P on the basis of a conclusive experiential reason.

CR+defensibility: S knows that P iff S believes P on the basis of a conclusive reason that makes the belief defensible.

We contend that acceptance of any of these analyses necessitates rejection of closure. As the following considerations suggest, theorists who accept one of these analyses and also accept closure are committed to accepting skepticism. Knowing that X's being a porpoise implies X's not being a dolphinfish that appears to her to be a porpoise, Lisa infers that X isn't such a fish. Consider the following skeptical arguments:

(A1) If Lisa knows X is a porpoise, then, in virtue of closure, she knows it isn't a dolphinfish that appears to her to be a porpoise. But she doesn't know X isn't such a fish, for X's appearing to her to be a porpoise doesn't enable her to distinguish between the competing possibilities, X's being a porpoise and its being a dolphinfish that appears to her to be a porpoise. Consequently, she doesn't know X is a porpoise.

(A2) If Lisa knows X is a porpoise, then, in virtue of closure, she knows it isn't a dolphinfish that appears to her to be a porpoise. But she doesn't know X isn't such a fish, for X would appear to her to be a porpoise were it a dolphinfish that appears to her to be a porpoise. Consequently, she doesn't know X is a porpoise.

(A3) If Lisa knows X is a porpoise, then, in virtue of closure, she knows it isn't a dolphinfish that appears to her to be a porpoise. But she doesn't know X isn't such a fish, for X's appearing to her to be a dolphinfish doesn't make her conclusion belief defensible. Consequently, she doesn't know X is a porpoise.

Since similar skeptical arguments could be devised to discredit practically any case of apparent knowledge, theorists who adopt one of the above-mentioned analyses of generic knowledge and accept closure appear to be committed to accepting

²⁸ CR+contrastivity implies that Jimmy doesn't know that X is not a dolphinfish on the basis of X's being a porpoise because there is an incompatible Q, viz. X is a dolphinfish, which might be (indeed, would be) the case were X a dolphinfish, and X's being a porpoise, in entailing not-Q. CR+contrastivity, a version of contrastivism about knowledge that was inspired by Dretske's views about contrastive aspects of knowledge attributions, will be discussed in the sequel and compared with other versions of contrastivism about knowledge.

skepticism. Consequently, the *prima facie* implausibility of skepticism constitutes weighty evidence against their views.

We suggest that would-be skeptics who adopt such CR-incorporating analyses of generic knowledge will be unsuccessful in building a strong case for acceptance of closure. Given epistemic-basing and inferential-reasons, DAK implies closure, but CR+contrastivity, CR+experientiality, and CR+defensibility imply only the following weaker theses:

CR+contrastivity-closure: If (i) S knows that P; (ii) S knows that P implies Q; (iii) S infers that Q; and (iv) S believes P on a basis that constitutes a contrastively conclusive reason for believing P and Q; then S knows that Q.

CR+experientiality-closure: If (i) S knows that P; (ii) S knows that P implies Q; (iii) S infers that Q; and (iv) S believes P on the basis of an experiential reason that is a conclusive reason for believing Q; then S knows that Q.

CR+defensibility-closure: If (i) S knows that P; (ii) S knows that P implies Q; (iii) S infers that Q; and (iv) S believes P on the basis of a reason that makes believing Q defensible; then S knows that Q.

These theses, which are too weak to support arguments like (A1), (A2) or (A3), are nonetheless strong enough to accommodate the intuitions that the skeptics would depend upon for purposes of building a case for acceptance of closure.²⁹

After exploring the implications of DAK for questions about the structure of a subject's fund of knowledge, we will attempt to show that DAK accounts for the *prima facie* plausibility of closure-invoking skeptical arguments and nonetheless implies that they are fallacious.

4. The Structure of Knowledge

DAK and epistemic-basing suggest that a subject's fund of knowledge can be usefully portrayed as having an edifice-like structure. The fund's foundation is

²⁹ An epistemic contextualist might contend that: (1) depending on the intentions, presuppositions, etc. of the speaker, a sentence such as "Lisa knows that X is a porpoise" can express a proposition that possesses truth conditions specified by DAK, by CR+contrastivity, by CR+experientiality, or by CR+defensibility, and (2) the skeptical arguments (A1), (A2) and (A3) are intuitively powerful because they are sound, provided that the knowledge-sentences they contain have the truth conditions specified by CR+contrastivity, by CR+experientiality, or by CR+defensibility, respectively. In the sequel we'll argue that such a contention is untenable because the skeptical arguments presuppose versions of closure that are unacceptable.

made up of knowledge-qualifying beliefs based immediately on knowledge-sufficing reasons that consist of experiential states, and its superstructure is made up of knowledge-qualifying beliefs based immediately on knowledge-sufficing reasons that consist of known facts, and based mediately on reasons that consist of experiential states.

The following case can be used to illustrate this foundationalist portrayal. At least one of Mia's reasons for believing that what she sees, X, is a bear is its appearing to her that X is a bear. Epistemic-basing implies that she believes X to be a bear on the basis of having this experience. She wouldn't have the experience if X weren't a bear.³⁰ Consequently, her having the experience is a conclusive reason for her believing that X is a bear, and DAK implies that the belief qualifies as knowledge. Knowing that X is a bear and knowing that its being a bear implies its being an animal, she infers that X is an animal. It's plausible that she knows that X is an animal, and her knowing this is implied by closure.

Her knowing that X is an animal is also implied by DAK, epistemic-basing, and inferential-reasons. Inferential-reasons implies that Mia's believing that X is a bear is at least one of her reasons for believing that X is an animal. Since she knows X is a bear, epistemic-basing implies that she believes X to be an animal on the basis of its being a bear. X wouldn't be a bear were it not an animal. Consequently, X's being a bear is a conclusive reason for her believing X to be an animal, and DAK implies that she knows that X is an animal. Thus, with the help of epistemic-basing and inferential-reasons, DAK implies closure.

Mia's knowledge-qualifying belief that X is a bear is part of the foundation of her fund of knowledge, for this belief is based immediately on a knowledge-sufficing reason, X's appearing to her to be a bear, that consists of an experiential state. Her knowledge-qualifying belief that X is an animal is part of the superstructure of her fund of knowledge, as this belief is based immediately on a knowledge-sufficing reason, X's being a bear, that she knows to be the case, and is based mediately on a reason, X's appearing to her to be a bear, that consists of an experiential state.³¹

³⁰ In saying this, we mean that if it weren't the case that what she sees is a bear, it wouldn't be the case that what she sees appears to her to be a bear. What she actually sees is a bear, and presumably it's impossible for the bear she sees to be anything other than a bear. But it's possible that she sees a non-bear instead of a bear; accordingly, it's possible that what she sees is a non-bear that doesn't appear to her to be a bear.

³¹ A reason, R, is an *immediate reason* of S's for believing P, let's say, iff there is no other reason, R', of S's for believing P that is such that R is a reason of S's for possessing R', and R' is a reason of S's for believing P. A state of S is *directly accessible* to S, let's say, iff it can in

Although this foundationalist portrayal of Mia's fund of knowledge can be helpful, it can be misleading for the following reasons: (i) The portrayal may suggest that in order to acquire a fund of knowledge, Mia must become aware of her experiential states and beliefs, and endeavor to ground her foundational-level beliefs upon these states and to construct a superstructure of additional beliefs that are supported by these beliefs and states. If Mia is a young child or an autistic person who lacks the ability to become aware of her experiential states and beliefs and to engage in such endeavors, the portrayal may suggest that her beliefs about X don't qualify as knowledge. And if her becoming aware of her experiential states and beliefs involves her acquiring knowledge about them, the portrayal may suggest that acquisition of knowledge requires prior possession of knowledge. Epistemic-basing and DAK imply that Mia's beliefs about X qualify as knowledge even if she lacks the ability to become aware of her experiential states and beliefs and to engage in such endeavors.³² (ii) The portrayal may suggest that Mia's belief that X is an animal isn't 'sufficiently supported,' and therefore doesn't qualify as knowledge, unless X's appearing to her to be a bear constitutes a knowledge-sufficing reason for it. Accordingly, the portrayal may make the following thesis seem acceptable:

principle be S's immediate reason for believing that S is in the state. A state of S is an *experiential state* of S, let's say, iff it's a directly accessible state of S that has the natural function of inducing belief. For example, its sensorially seeming to S that P, its intellectually seeming to S that P, etc. are experiential states of S, for they are directly accessible states of S that have the natural function of inducing belief. In contrast, S's hoping that P, S's fearing that P, S's desiring that P, S's feeling sad that P, etc. are directly accessible states of S that have natural functions other than that of inducing belief. (The question of whether all directly accessible states of S are mental states of S will be discussed in the sequel.)

³² S is *directly aware* of its being the case that P, let's say, iff its being the case that P is an immediate reason of S's for believing P. If its being the case that P is an immediate reason of S's for believing P, it *ipso facto* constitutes a conclusive reason of S's for believing P, for if it weren't the case that P, S wouldn't have this reason for believing P. Hence, DAK implies that if S is directly aware of its being the case that P, S knows that P. If a state of S is directly accessible to S, then it's possible in principle for S to become directly aware of being in the state. Since X's appearing to Mia to be a bear is an experiential state, it's directly accessible to her, and therefore she can in principle become directly aware of being in this state. (She may, of course, fail to do so because she lacks the requisite concepts, etc.) Thus, epistemic-basing and DAK can accommodate her becoming aware of X's appearing to her to be a bear. Nevertheless, these theses imply that her doing so isn't necessary for her acquiring knowledge that X is a bear and that X is an animal; consequently, the theses don't give rise to regress problems.

Epistemic-transitivity: If R is a knowledge-sufficing reason of S's for believing P, and its being the case that P is a knowledge-sufficing reason of S's for believing Q, then R is a knowledge-sufficing reason of S's for believing Q.

Acceptance of this thesis, however, is incompatible with acceptance of DAK and epistemic-basing. The bear Mia sees is in the bear enclosure of a zoo. Whenever the zookeepers remove the bear from the enclosure, they replace it with an ostrich. Accordingly, if what Mia sees weren't a bear, it would be an animal that wouldn't appear to her to be a bear. Now if it so happened that all of the zoo's ostriches died, the zookeepers would place an animated bear replica in the enclosure. Consequently, if what Mia sees weren't an animal, it would be a bear replica that might appear to her to be a bear. Since what Mia actually sees, X, is a bear that wouldn't appear to her to be a bear were it not one, DAK and epistemic-basing imply that X's appearing to her to be a bear is a knowledge-sufficing reason for her believing that X is a bear, and that X's being a bear is a knowledge-sufficing reason for her believing that X is an animal, even though X's appearing to her to be a bear isn't a knowledge-sufficing reason for her believing that X is an animal. Thus, DAK and epistemic-basing imply that the epistemic-transitivity thesis is false.

DAK and epistemic-basing suggest that a subject's fund of knowledge can be more appropriately portrayed as a collection of *informational networks*, i.e., networks that contain interconnected beliefs, experiential states, and information-conveying reasons for beliefs. In virtue of being a conclusive reason for Mia's believing that X is a bear, X's appearing to her to be a bear conveys the information that X is a bear, and enables her believing that X is a bear to result in her believing that X is an animal on the basis of this information. This basis constitutes a conclusive reason for the belief, and therefore conveys the information that X is an animal and ensures that the belief qualifies as knowledge. X might be a bear replica that appears to her to be a bear were it not an animal. Hence, X's appearing to her to be a bear, which is a mediate reason for her believing that X is an animal, isn't a conclusive reason for her believing this, and therefore doesn't convey the information that X is an animal.³³ While the

³³ As we are using the expression 'conveys the information', a reason, R, of S's for believing P *conveys the information* that P iff R wouldn't be the case if it weren't the case that P. Although a reason's *conveying information* is closely related to its *carrying information* (as the latter property is defined by Dretske), the two properties may not be identical. See, e.g., Fred Dretske, *Knowledge and the Flow of Information* (Cambridge: MIT Press, 1981), for a discussion of the notion of *carrying information*.

foundationalist portrayal of Mia's fund of knowledge may suggest that this mediate reason doesn't 'sufficiently support' the belief that X is an animal, the informationalist portrayal suggests that there is simply no need for this mediate reason to convey the information that X is an animal – X's being a bear, which is an immediate reason for her belief that X is an animal, is a conclusive reason for this belief, and therefore conveys the information that X is an animal and ensures that the belief qualifies as knowledge.³⁴

5. Skepticism and Epistemic-Transitivity

In making the epistemic-transitivity thesis seem acceptable, the foundationalist portrayal of a subject's fund of knowledge may create the impression that the requirements specified by DAK are insufficient for knowledge, and should be augmented along the following lines. S *unassailably* believes P, let's say, iff S believes P on a basis that constitutes a conclusive reason for believing any Q implied by P. Consider the following analysis of knowing:

CR+unassailability: S knows that P iff S unassailably believes P on the basis of a conclusive reason.³⁵

CR+unassailability implies that Mia's superstructure-level belief that X is an animal qualifies as knowledge only if X's appearing to her to be a bear constitutes a conclusive reason for it, for she cannot unassailably believe that X is a bear on the basis of having this experience unless her having it constitutes a conclusive reason not only for X's being a bear, but also for X's being an animal and for everything else implied by X's being a bear. Thus, CR+unassailability implies the epistemic-transitivity thesis. Accordingly, acceptance of CR+unassailability involves acceptance of a view we'll call *strong experiential foundationalism*: beliefs qualify as superstructure-level knowledge only if they potentially qualify as

³⁴ The two portrayals aren't incompatible, and a view that involves acceptance of epistemic-basing and DAK can be classified both as a version of foundationalism and as a version of what can be called *informationalism*: the view that conveyance of information should be accorded a central role in epistemology. The superiority of the informationalist portrayal derives from the fact that it lends no support to the epistemic-transitivity thesis. (The foundationalist and informationalist portrayals concern the structure of a subject's fund of *knowledge* rather than the structure of a subject's fund of *justifiable beliefs*.)

³⁵ The conclusive-reason specification in CR+unassailability is implied by the unassailable-belief specification. Accordingly, CR+unassailability can be expressed as: S knows that P iff S unassailably believes P.

foundational-level knowledge. CR+unassailability implies that in order to qualify as knowledge, Mia's superstructure-level belief that X is an animal must be capable of qualifying as foundational-level knowledge, for it must be the case that if she based her belief that X is an animal directly upon its appearing to her to be a bear, the belief would qualify as foundational-level knowledge. Acceptance of DAK involves acceptance of a weaker view that we'll call *moderate experiential foundationalism*: Beliefs qualify as superstructure-level knowledge only if they are based on facts that are known on the basis of conclusive experiential reasons.

CR+unassailability suffers from drawbacks that don't affect DAK: (i) CR+unassailability has the implausible consequence that Mia doesn't know that X is a bear – her belief that X is a bear doesn't qualify as unassailable, since it's basis, X's appearing to her to be a bear, isn't a conclusive reason for her believing that X is an animal. (ii) CR+unassailability has the implausible consequence that Mia doesn't know that X is an animal – her belief that X is a bear doesn't qualify as knowledge, and therefore her belief that X is an animal isn't based on X's being a bear. (iii) X's being a bear implies X's not being a *bear-doppelganger*, i.e., a non-bear that appears to her to be a bear because she is a victim of massive deception by an evil genius. If CR+unassailability is true, she cannot know that X is a bear on the basis of X's appearing to her to be a bear unless she wouldn't have this experience if X were a bear-doppelganger, for CR+unassailability specifies that her having the experience must be a conclusive reason not only for X's being a bear, but also for everything that X's being a bear implies. Since this condition is obviously unsatisfiable, the requirements for knowledge specified by CR+unassailability are implausibly stringent. (iv) Intuitions supporting CR+unassailability can be accommodated by distinguishing between requirements for knowledge itself, i.e., generic knowledge, and requirements for an important species of knowledge that can be called *unassailable knowledge*: S has *unassailable knowledge* that P iff S unassailablely believes that P on the basis of a conclusive reason. As Cartesians would be apt to contend, it seems plausible that Mia could acquire unassailable knowledge of at least some propositions, e.g., that X appears to her to be a bear, that she thinks X is a bear, that she exists, etc.³⁶ It seems clear,

³⁶ S *thinks* that P, let's say, iff S occurrently believes that P. It's plausible that: (i) Mia can become directly aware of X's appearing to her to be a bear and of her thinking that X is a bear; and (ii) even though X's appearing to her to be a bear implies that it's not the case that X doesn't appear to her to be a bear because she is a victim of massive deception by an evil genius, and even though her thinking that X is a bear implies it's not being the case that she doesn't think that X is a bear because she is a victim of massive deception by an evil genius,

however, that she cannot acquire unassailable knowledge that X is a bear on the basis of its appearing to her to be one.

A skeptic who accepts CR+unassailability could respond along the following lines:

Assume for the sake of the argument that Mia acquires knowledge that X is a bear on the basis of the conclusive reason consisting of X's appearing to her to be a bear. Knowing that X is a bear and that its being a bear implies its not being a bear-doppelganger, she infers that X isn't a bear-doppelganger. Closure implies that her conclusion belief qualifies as knowledge. But it's implausible that this belief does qualify. While DAK implies that the belief qualifies, CR+unassailability implies that it doesn't. Clearly, then, the requirements specified by DAK are insufficient for knowledge. Although CR+unassailability has the implausible consequences that she doesn't know that X is a bear and that she doesn't know that X is an animal, it nonetheless constitutes an analysis of knowing that is superior to DAK.

It does seem implausible that Mia's conclusion belief that X isn't a bear-doppelganger qualifies as knowledge. But what accounts for this intuition? The skeptic's argument presupposes that the implausibility derives from the belief's not qualifying as unassailable. An anti-skeptic who accepts DAK could proffer the following rebuttal:

It seems clear that Mia's belief that X isn't a bear-doppelganger isn't *defensible*, i.e., justifiable from her own perspective. The very content of her belief -- that X isn't a non-bear that appears to her to be a bear because she is a victim of massive deception by an evil genius -- should, it seems, make it obvious to her that basing the belief upon X's appearing to her to be a bear isn't a reasonable way for her to acquire the truth about the matter. Accordingly, it's likely that the implausibility derives from the belief's not being defensible rather than from its not being unassailable, and this assessment is confirmed by the following considerations: (i) Assume that Mia mistakenly but rationally believes that she is a victim of massive deception by an evil genius, and assume that she mistakenly but rationally believes that an omnipotent deity constantly intervenes on her behalf to ensure that her visual-experience-based beliefs are invariably true. It now seems plausible that her conclusion belief is defensible -- from her own perspective, the belief may even be just as justifiable as her beliefs that X is a bear and that X is an animal. And it now seems plausible that she not only knows that X is a bear and that it's an animal, but also that it isn't a bear-doppelganger. (ii)

she possesses unassailable knowledge that X appears to her to be a bear and that she thinks that X is a bear. (Perhaps she can even acquire unassailable knowledge that she exists.)

Assume instead that Mia doesn't have the above-mentioned beliefs about an evil genius and an omnipotent deity, and assume that she is a victim of massive deception by an evil genius, but an omnipotent deity constantly intervenes on her behalf to ensure that her visual-experience-based beliefs are invariably true. It once again seems clear that her belief that X isn't a bear-doppelgänger is indefensible, and it seems implausible that the belief qualifies as knowledge. But the belief qualifies as unassailable, and CR+unassailability, like DAK, implies that she not only knows that X is a bear and that it's an animal, but also that it's not a bear-doppelgänger.

Since CR+unassailability and DAK both imply that defensibility isn't a requirement for knowledge, theorists who accept either of these analyses must attempt to show that intuitions associated with defensibility really aren't germane to judgments regarding the presence or absence of generic knowledge. As we have suggested earlier in the paper, such intuitions can be accommodated by distinguishing between requirements for generic knowledge and requirements for an important species of knowledge we called *defensible knowledge*: S has *defensible knowledge* that P iff S defensibly believes that P on the basis of a conclusive reason.

As the following considerations show, another foundationalism-inspired way of augmenting DAK's conditions – CR+experientiality, i.e., S knows that P iff S believes P on the basis of a conclusive experiential reason – yields a competing analysis of knowing that can undermine the above skeptical argument.³⁷ CR+experientiality, epistemic-basing, and inferential-reasons imply CR+experientiality-closure, i.e., if (i) S knows that P; (ii) S knows that P implies Q; (iii) S infers that Q; and (iv) S believes P on the basis of an experiential reason that is a conclusive reason for believing Q; then S knows that Q.³⁸

³⁷ In a personal communication, Dretske suggested that we explore competing analyses like CR+experientiality. CR+experientiality doesn't imply that a knowledge-qualifying belief that P must be based *immediately* upon a conclusive experiential reason, but does imply that any sequence of conclusive reasons leading to a knowledge-qualifying belief that P must contain a conclusive experiential reason for believing P.

³⁸ As noted above, Mia knows that X's being a bear implies its being an animal. Suppose that: (i) she knows this only if she knows it *a priori*, i.e., only if she knows it independently of sensory experience, and (ii) she believes it on the basis of a conclusive reason consisting of its *intellectually* seeming to her that it's so. CR+experientiality implies that her belief qualifies as knowledge. Since it's plausible that both of these suppositions can be true, CR+experientiality seems capable of accommodating her knowing that X's being a bear implies its being an animal.

An anti-skeptic who accepts CR+experientiality could respond to the above skeptical argument along the following lines:

Assume for the sake of the argument that Mia acquires knowledge that X is a bear on the basis of the conclusive reason consisting of X's appearing to her to be a bear. Knowing that X is a bear and that its being a bear implies its not being a bear-doppelganger, she infers that X isn't a bear-doppelganger. Although closure implies that her conclusion belief qualifies as knowledge, CR+experientiality-closure doesn't have this implausible consequence – even though epistemic-basing and inferential-reasons imply that the belief is based on a conclusive reason consisting of X's being a bear, this reason isn't an experiential state. While DAK has the plausible consequence that her premise belief qualifies as knowledge, it implies closure and therefore has the implausible consequence that her conclusion belief also qualifies. And while CR+unassailability has the plausible consequence that her conclusion belief doesn't qualify as knowledge, it implies closure and therefore has the implausible consequence that her premise belief doesn't qualify. In contrast, CR+experientiality has the plausible consequence that her premise belief qualifies as knowledge and has the plausible consequence that her conclusion belief doesn't qualify. Clearly, then, the requirements specified by DAK are insufficient for knowledge, and those specified by CR+unassailability are so stringent that they lead to skepticism. Thus, CR+experientiality constitutes an analysis of knowing that is superior to these competitors.

CR+experientiality, like CR+unassailability, implies that Mia's superstructure-level belief that X is an animal qualifies as knowledge only if X's appearing to her to be a bear constitutes a conclusive reason for it. Thus, acceptance of CR+experientiality involves acceptance of the epistemic-transitivity thesis and acceptance of strong experiential foundationalism. CR+experientiality implies that in order to qualify as knowledge, Mia's superstructure-level belief that X is an animal must be capable of qualifying as foundational-level knowledge – it must be the case that if she based her belief that X is an animal directly upon its appearing to her to be a bear, the belief would qualify as foundational-level knowledge.

CR+experientiality suffers from drawbacks that don't affect DAK: (i) Since X might be a bear replica that appears to Mia to be a bear were it not an animal, CR+experientiality has the implausible consequence that she doesn't know that X is an animal even though she knows that X is a bear, knows that its being a bear implies its being an animal, and infers that it's an animal. (ii) CR+experientiality is incompatible with a highly plausible principle, viz. closure. (iii) Although it's implausible that Mia's belief that X isn't a bear-doppelganger qualifies as knowledge, the source of this implausibility seems to be the belief's being indefensible rather

than the belief's lacking a conclusive experiential basis. Her belief that X is an animal seems to be defensible, and it's plausible that it qualifies as knowledge even though it lacks a conclusive experiential basis. Assume that Mia's belief that X is a bear is indefensible because she mistakenly but rationally believes that she is a victim of massive deception by an evil genius, but lacks any beliefs that make it reasonable for her to rely on her visual experiences to acquire the truth about the matter. It seems plausible that her belief that X is a bear doesn't qualify as knowledge, despite being based on a conclusive experiential reason. (iv) CR+experientiality implies the epistemic-transitivity thesis, which is closely associated with aspects of the foundationalist portrayal of a subject's fund of knowledge that, from the perspective afforded by the informationalist portrayal, appear to be arbitrary and misleading. In virtue of being a conclusive reason for Mia's believing that X is a bear, X's appearing to her to be a bear conveys the information that X is a bear, and enables her believing that X is a bear to result in her believing that X is an animal on the basis of this information. This basis constitutes a conclusive reason for the belief, and therefore conveys the information that X is an animal and ensures that the belief qualifies as knowledge. There is simply no need for X's appearing to her to be a bear to convey the information that X is an animal. (v) Intuitions supporting CR+experientiality can be accommodated by distinguishing between requirements for knowledge itself, i.e., generic knowledge, and requirements for an important species of knowledge that can be called *experiential knowledge*: S has *experiential knowledge* that P iff S believes that P on the basis of a conclusive experiential reason. Although Mia's belief that X is an animal qualifies as generic knowledge, it doesn't qualify as experiential knowledge.

6. Skepticism and Closure

We now attempt to show that DAK accounts for the *prima facie* plausibility of closure-invoking skeptical arguments, and nonetheless implies that they are fallacious. Our guiding hypothesis will be that such arguments exploit confusions pertaining to generic knowledge on the one hand, and to various species of knowledge on the other. In some cases, the skeptical arguments presuppose the truth of one of the competitors of DAK we've discussed in this paper.

Ann believes that X is a zebra on the basis of a conclusive reason consisting of X's appearing to her to be a zebra. DAK implies that she knows X is a zebra on the basis of having this experience. She would have this experience were X a *zebra-doppelganger*, i.e., a non-zebra that appears to her to be a zebra because she is a victim of massive deception by an evil genius. However, the situation is such

that if X weren't a zebra, it wouldn't be a zebra-doppelganger – it would be an elephant, a giraffe, or something else that wouldn't appear to her to be a zebra. Knowing that X's being a zebra implies its not being a zebra-doppelganger, she infers that it isn't such a non-zebra. Closure implies that her conclusion belief qualifies as generic knowledge. This is also implied by DAK, epistemic-basing and inferential-reasons. Inferential-reasons implies that she believes X isn't a zebra-doppelganger because she believes it's a zebra, and epistemic-basing implies that she believes it isn't such a non-zebra on the basis of its being a zebra. Since X wouldn't be a zebra if it were a zebra-doppelganger, its being a zebra is a conclusive reason for her belief that it isn't such a non-zebra. DAK implies that her conclusion belief qualifies as generic knowledge.

Suppose that Ann's premise beliefs qualify as defensible knowledge. Neither closure nor the above-mentioned theses imply that her conclusion belief qualifies as defensible knowledge. Indeed, it's plausible that the latter belief is indefensible. She believes X is a zebra on the basis of its appearing to her to be one. She goes on to believe that X isn't a zebra-doppelganger on the basis of it's being a zebra. It's plausible that refraining from doing this might be at least as reasonable from her own perspective as doing it, were she concerned at the time only with acquiring the truth regarding whether or not X is a zebra-doppelganger by doing it. (If she defensibly knew that she defensibly knew that X is a zebra, she might acquire defensible knowledge that X isn't a zebra-doppelganger. In such a case, however, her conclusion belief would be based on her defensibly knowing that X is a zebra rather than on X's being a zebra.) Thus, it's plausible that she lacks defensible knowledge that X isn't a zebra-doppelganger. In many everyday situations beliefs are considered to qualify as knowledge only when they are defensible, and the indefensibility of a given belief is often construed as a good reason to think and to say that it doesn't qualify as knowledge. Consequently, the obvious indefensibility of her conclusion belief may give rise to the mistaken impression that it doesn't qualify as knowledge.

The following closure-invoking skeptical arguments purport to show that Ann's conclusion belief that X isn't a zebra-doppelganger fails to qualify as knowledge, and that, as a consequence, her premise belief that X is a zebra also fails to qualify.

Skeptical Argument 1: Assume for the sake of the argument that Ann's belief that X is a zebra qualifies as knowledge. Closure implies that she knows X isn't a zebra-doppelganger. If X were a zebra-doppelganger, however, she might possess the same reason for believing that it isn't a zebra-doppelganger that she actually

possesses, viz. its appearing to her to be a zebra. Hence, she doesn't know that it isn't a zebra-doppelganger. Since the assumption implies a falsehood, it is false.

This argument is fallacious because the assumption doesn't imply a falsehood. Although Ann doesn't know that X isn't a zebra-doppelganger on the basis of its appearing to her to be a zebra, she does know this on the basis of X's being a zebra.

A skeptic who is influenced by the foundationalist portrayal of a subject's fund of knowledge might respond by arguing along the following lines:

Since X's appearing to Ann to be a zebra isn't a knowledge-sufficing reason for her belief that X isn't a zebra-doppelganger, her having this experience doesn't sufficiently support the belief, and therefore doesn't sufficiently support her belief that X is a zebra. Hence, neither of these beliefs qualifies as knowledge. Since DAK implies that these beliefs do qualify as knowledge, DAK should be replaced with CR+unassailability, which is equivalent to: S knows that P iff S unassailably believes that P on the basis of a conclusive reason, i.e., iff S believes that P on the basis of a reason, R, that is such that, for every Q that is implied by P, R wouldn't be the case if it weren't the case that Q. CR+unassailability implies that Ann doesn't know that X isn't a zebra-doppelganger, and implies that she doesn't know that X is a zebra.

The informationalist portrayal of Ann's fund of knowledge can serve to highlight the arbitrary and misleading character of this foundationalist portrayal of it. In virtue of being a conclusive reason for Ann's believing that X is a zebra, X's appearing to her to be a zebra conveys the information that X is a zebra, and enables her believing that X is a zebra to result in her believing that X isn't a zebra-doppelganger on the basis of this information. Since this basis constitutes a conclusive reason for the belief, it conveys the information that X isn't a zebra-doppelganger and ensures that the belief qualifies as knowledge. X's appearing to her to be a zebra, which is a mediate reason for her believing that X isn't a zebra-doppelganger, isn't a conclusive reason for her believing this, and therefore doesn't convey the information that X isn't a zebra-doppelganger. While the foundationalist portrayal of her fund of knowledge suggests that this mediate reason doesn't 'sufficiently support' her belief that X isn't a zebra-doppelganger, the informationalist portrayal indicates that there is simply no need for this mediate reason to convey the information that X isn't a zebra-doppelganger. X's being a zebra is a conclusive reason for this belief, and therefore conveys the information that X isn't a zebra-doppelganger and ensures that the belief qualifies as knowledge. Accordingly, CR+unassailability should be rejected, as it specifies implausibly stringent requirements for knowledge.

Skeptical Argument 2: Assume for the sake of the argument that Ann's belief that X is a zebra qualifies as knowledge. Closure implies that she knows that X isn't a zebra-doppelganger. Since she knows both that X is a zebra and not a zebra-doppelganger, she is in a position to know that it's zebra rather than a zebra-doppelganger. If it weren't the case that X is a zebra rather than a zebra-doppelganger, however, it might be the case that X is a zebra-doppelganger. And if X were a zebra-doppelganger, it would appear to her to be a zebra. Hence, she is in no position to know that X is a zebra rather than a zebra-doppelganger. Since the assumption implies a falsehood, it is false.

This argument is fallacious because the assumption doesn't imply a falsehood. The argument involves the false presupposition that if Ann knows both that X is a zebra and that X isn't a zebra-doppelganger, she is in a position to know that X is a zebra rather than a zebra-doppelganger. According to contrastive-knowing, she knows that X is a zebra rather than a zebra-doppelganger only if she believes this on the basis of a differentiator that enables her to distinguish between the competing possibilities, X's being a zebra and X's being a zebra-doppelganger. X's appearing to her to be a zebra cannot play the role of a differentiator, for she might have this experience if X were a zebra-doppelganger. And X's being a zebra cannot play this role, for X's being a zebra entails X's not being a zebra-doppelganger. If X's being a zebra could play this role, knowing that X is a zebra *rather than* a zebra-doppelganger couldn't constitute an epistemic achievement that was superior to knowing that X is a zebra and knowing that X isn't a zebra-doppelganger.³⁹ Thus, the assumption doesn't imply the false proposition that she is in a position to know that X is a zebra rather than a zebra-doppelganger.

Skeptical Argument 3: Assume for the sake of the argument that Ann's belief that X is a zebra qualifies as knowledge. Closure implies that she knows that X isn't a zebra-doppelganger. Since her conclusion belief is based on a conclusive reason, viz. X's being a zebra, it would qualify as knowledge were it defensible. But it fails to qualify as knowledge because it is indefensible. Since the assumption implies a falsehood, it is false.

This argument involves a commitment to the truth of CR+defensibility: S knows that P iff S defensibly believes that P on the basis of a conclusive reason. As the following considerations show, acceptance of CR+defensibility is incompatible

³⁹ This is not to deny that in some contexts a speaker who utters the sentence "Ann knows that X is a zebra and not a mule" might affirm not only that Ann knows both that X is a zebra and that X isn't a mule, but also that she knows that X is a zebra rather than a mule.

with acceptance of closure. If CR+defensibility and closure are both true, then the fact that Ann's conclusion belief that X isn't a zebra-doppelganger is indefensible implies that her premise belief that X is a zebra, which is based on a conclusive reason, must be indefensible. But this belief seems perfectly capable of being defensible – it seems quite possible that her believing that X is a zebra on the basis of X's appearing to her to be a zebra would be more reasonable from her own perspective than not doing this, were she concerned at the time only with acquiring the truth regarding whether or not X is a zebra by doing it. A defender of Argument 3 might respond by contending that, even if her belief is initially defensible, it becomes indefensible as soon as she comes to know that X's being a zebra implies its not being a zebra-doppelganger, for she then possesses a good reason to doubt that X is a zebra, viz. the very fact that its being a zebra implies its not being a zebra-doppelganger. This contention, however, is implausible, as it implies that no amount of experiential evidence would render the belief sustainably defensible. Assume for the sake of the argument that: (i) initially, she defensibly believes that X is a zebra on the basis of a conclusive reason consisting of X's appearing to her to be a zebra, X's sounding like a zebra to her, X's smelling like a zebra to her, X's seeming to her to walk and run like a zebra, etc.; and (ii) she then comes to know that X's being a zebra implies X's not being a non-zebra that appears to her to be a zebra, sounds like a zebra to her, smells like a zebra to her, seems to her to walk and run like a zebra, etc. In virtue of being committed to acceptance of CR+defensibility and to closure, the skeptic is committed to acceptance of the implausible proposition that she no longer *defensibly* believes that X is a zebra. It seems clear, then, that acceptance of CR+defensibility is incompatible with acceptance of closure.

Skeptical Argument 4: Assume for the sake of the argument that Ann's belief that X is a zebra qualifies as knowledge. Closure implies that she knows that X isn't a zebra-doppelganger. Her conclusion belief, however, is indefensible. Hence, in virtue of the truth of the following two theses, the assumption is false: (i) Closure, and (ii) Beliefs qualify as knowledge only if they are defensible and non-accidentally true. These theses are among the 'analytically true' principles of a folk theory about non-accidentally true belief – call it *folk epistemics* – that involves the conceptualization of such belief as *knowledge*. The principles of folk epistemics, taken collectively, have the unfortunate consequence that the concept of knowledge is virtually inapplicable to real world situations – very few, if any, non-accidentally true beliefs can qualify as genuine knowledge. While ordinary skeptics have correctly contended that little or no knowledge exists, they have typically neglected to go on to accept the view – call it *metaskepticism* – that the concept of knowledge is part of a fundamentally flawed folk theory that should be replaced with one that more accurately

represents the nature of non-accidentally true belief. Such a replacement theory could serve as a highly useful guide for philosophers and cognitive scientists investigating the important role that non-accidentally true belief plays in human life.

This argument presupposes that the concept of knowledge is analogous to the ‘theoretic’ concepts that constitute integral components of many theories. Furthermore, the argument involves the contention that closure-invoking skeptical arguments are sound. If such arguments turn out to be sound, metaskepticism may turn out to be an attractive version of skepticism, provided that the concept of knowledge can be convincingly construed as a ‘theoretic’ concept. As we have shown above, however, there are good reasons to think that closure-invoking skeptical arguments are unsound. Epistemic-basing, DAK, and inferential-reasons are plausible theses that discredit closure-based skepticism. Hence, there are good reasons to think that metaskepticism is unacceptable.

7. Conclusion

We have argued that DAK not only accords with closure, but also implies it. In addition, we have argued that DAK accounts for the *prima facie* plausibility of closure-invoking skeptical arguments, and nonetheless implies that they are fallacious. If our arguments turn out to be sound, the acceptability of DAK will be significantly enhanced by the fact that, despite implying closure, it undermines skepticism. While we think that DAK is superior to each of the competing analyses we have discussed, we end this paper with an admission that three of these competitors are, in our opinion, still in the running: CR+experientiality, CR+contrastivity, and CR+defensibility. The first excels at accommodating foundationalist intuitions, the second at accommodating contrastivist intuitions, and the third at accommodating internalist intuitions. Like DAK, these analyses undermine skepticism; but they do so by falsifying closure. It seems clear, therefore, that if one deems acceptance of closure and rejection of skepticism to be of overriding importance, one should seriously consider accepting Dretske’s analysis of knowing.⁴⁰

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