

# CORNEA, CARNAP, AND CURRENT CLOSURE BEFUDDLEMENT<sup>1</sup>

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Over the years, CORNEA--my "Condition of Reasonable Epistemic Access"--has gotten a mixed reception. In a forthcoming paper (see Endnote/Appendix 1), Andrew Graham and Stephen Maitzen<sup>2</sup> (hereafter "the authors") find CORNEA in deep trouble: it entails, they think, "intolerable violations of closure under known entailment." I agree that CORNEA doesn't obey closure under known entailment (hereafter, for short, just "Closure"). But I don't agree that this is trouble for CORNEA. I want here to spell out why, and show why it matters.<sup>3</sup>

Though the authors don't mention it, Closure has itself been under a cloud of befuddlement since the mid-1970's.<sup>4</sup> John Hawthorne notes that many now embrace "the idea that no version of the closure principle is true"—to the dismay of others like Richard Feldman, who finds this "among the least plausible ideas to gain currency in epistemology in recent years."<sup>5</sup> In large part, the cloud over Closure arises because, as many see it, unpalatable skeptical consequences follow from Closure combined with certain other principles that are judged even more compelling than Closure. Indeed, this perceived tension between Closure and these "other principles" is a main

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1. A version of this paper is forthcoming in *Faith and Philosophy*. I thank my Calvin colleagues for comments on an earlier draft, and especially thank Del Ratzsch for his practical help.
  2. Andrew Graham and Stephen Maitzen, "CORNEA and Closure," *Faith and Philosophy* (forthcoming).
  3. In Bruce Russell and Stephen Wykstra, "The 'Inductive' Argument from Evil: A Dialogue," *Philosophical Topics*, 16 (1988), pp. 133-160, Bruce Russell gives (in the voice of "Athea," p. 148) a "demon table" objection much like that of Graham and Maitzen. My response to Bruce (in the voice of "Bea Leaver," pp. 151-152) is the same as my response to Graham and Maitzen (Section 8 below), but in 1988 I didn't see the bearing on the current befuddlement about closure, which is my real concern here.
  4. Gail Stine thus found closure under known entailment "of very bad repute" in 1975, when it had barely been named. See G. C. Stine, "Skepticism, Relevant Alternatives, and Deductive Closure," *Philosophical Studies*, 19 (1976), p. 249.
  5. John Hawthorne, *Knowledge and Lotteries* (Oxford University Press, 2004), p. 38, sympathetically quoting Feldman (1999), "Contextualism and Skepticism," *Philosophical Perspectives*, 103, p. 95.

impetus for the rise of the new contextualist theories, in which Calvin graduate Keith DeRose has played such an important role. And as it turns out, chief among these other principles is--heaven help us--a version of what none other than CORNEA.

In saying this, however, my aim isn't to shift the trouble from CORNEA to Closure. I'm a fan of Closure; I come to praise it not to bury it. My hope is to help both CORNEA and Closure stay out of trouble. To do this, I want here to review *and extend* a distinction made by Rudolph Carnap between two senses of confirmation, a "static" sense and a "dynamic" sense. This extension of Carnap's distinction--the "Carnapian Distinction" or "By/On Distinction," as I'll call it--was built into CORNEA from the outset, but both its extension and its relevance to Closure (and contextualism!) seems to me underappreciated.

Specifically, I'll argue here that the trouble that Graham and Maitzen find in CORNEA arises from current befuddlement about closure itself. The Carnapian By/On Distinction, suitably extended, shows how to defuddle Closure; and this allows us to see how Closure works in tandem with CORNEA. I will argue that CORNEA does not obey Closure because it shouldn't: CORNEA applies to "dynamic" epistemic operators, whereas closure principles hold only for "static" ones. What the authors see as an intolerable vice of CORNEA is actually a virtue, helping us see what closure principles should—and shouldn't—themselves be about.

I begin, in Sections 1 through 3, by giving a wider view of CORNEA, Closure, and their apparent troubles. In Sections 4 through 7, I explain Carnap's distinction and show how extending it helps relieve these troubles. Section 8 locates two key errors in the authors' specific arguments. And in my verbal presentation, I'll show, briefly, that the By/On Distinction sheds light on a some things that might worry us in arguments by the 1996 treatments of Draper given by Peter Van Inwagen and Alvin Plantinga. Between the lines, I'm hinting that using the By/On

Distinction to defuddle Closure is likely to ease the pressure toward contextualism; but I shall resolutely refuse to elaborate these hints on this occasion.

# 1. What CORNEA says: a wider view.

CORNEA emerged in response to William Rowe's inductive arguments from evil. Rowe begins from sufferings for which we see no good sufficient to justify the theistic God in allowing this suffering; Rowe then urges that such data—our seeing no such good for select sufferings—is<sup>6</sup> strong inductive support for there being no such good (and hence, by a short further step, for there being no God.) Initially, Rowe put this in the appears-idiom: by virtue of our seeing no good for the sufferings, he said, "it appears that there is no such good." CORNEA thus was also initially put the appears-idiom. Later Rowe morphed to a probabilistic idiom; CORNEA morphed to keep up. The authors focus on CORNEA in its appears-version, but the same issues arise for later versions.

On all versions, the key idea behind CORNEA is a proposed test for whether some alleged evidence E seriously "supports"—in a sense to be clarified presently—some hypothesis H. The test is this: ask whether, if H were false, E is still pretty much what one should expect. If the answer is "Yes," then E can't seriously support H. For example, let H be the hypothesis that there are no HIV viruses on a specific hypodermic needle about to go into your arm, and let E be the datum that on close visual inspection, the doctor sees no such viruses on the needle. Does his seeing no such viruses seriously support the claim that there are none? Using the test, we ask: "if H were false (if there were viruses present), is E (your seeing none) still pretty much

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6. I hereby plump for treating "data" like "news"—as a singular mass noun.

expectable?" The answer is "Yes"; the idea behind CORNEA is that E can't then seriously support H. And here this result seems just right.

This requirement on the supports-relation is the key idea behind CORNEA. But CORNEA itself proposes a higher-level test-condition--a requirement on rational (justified, entitled) claims about the supports-relation. The condition is this: for some human H (Henry, let's say) to be entitled<sup>7</sup> to claim that new evidence E seriously supports H, it must be reasonable for Henry to believe (should he consider the matter) that the answer to the test question is "No." Let's put this in the epistemic "appears" idiom (as Rowe initially put his case). Suppose the doctor inspects the needle and sees no HIV viruses. Is he, on the basis of this cognitive situation, entitled<sub>to</sub> say "It appears that there are no HIV viruses on this needle"? CORNEA says he is entitled to say this only if the following condition is met: that it is reasonable for him to believe, given what he has to go on, that if the italicized claim were false (i.e., if there were HIV viruses on the needle), his visual data would be different (with respect to the no-see feature) than it is. For a normal doctor this condition is of course not met, so the doctor isn't entitled to the make the appears-claim. Again this result seems just right, and generalizing it gives CORNEA in its official 1984 formulation:<sup>8</sup>

On the basis of cognized situation s, human H is entitled to claim "It appears that p" only if it is reasonable for H to believe that, given her cognitive faculties and

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7. Here I assume Sam is a suitably idealized reflective cognizer. If persons have non-culpably acquired distorted views about the supports-relation, they might be entitled, relative to such views, to make any number of wrong-headed claims about E and H.

8. Stephen Wykstra, "The Humean Obstacle to Evidential Arguments from Suffering: On Avoiding the Evils of 'Appearance'." International Journal for Philosophy of Religion 16 (1984), p. 85. Reprinted in Robert Adams and Marilyn Adams (eds.), The Problem of Evil (Oxford University Press, 1990), pp. 138- 160. I clarify and revise CORNEA in "Rowe's Noseeum Arguments from Evil," Daniel Howard-Snyder (ed.), The Evidential Argument from Evil (Indiana University Press, 1996), pp. 126-150.

the use she has made of them, if p were not the case, s would likely be different<sup>9</sup>  
than it is in some way discernible by her.

It is, as we will see, this 1984 version that the authors indict for "intolerable violations of closure." But their indictment will apply equally (well or not) to later versions as well.

## 2. Trouble in CORNEA-land

What the authors call "the principle of closure under known entailment" is, as I see it, not so much one principle as a family of principles. Like CORNEA, these too spring from a core intuition: if you are to a certain degree "epistemically well-off" with respect to p, and you see that p entails q, then you are at least equally well-off with respect to q. Here there are a family of epistemic operators covering aspects of being "epistemically well-off." Letting "knows\*" represent this family of operators, closure principles thus take roughly<sup>10</sup> the following form:

If Sam knows\* that p, and Sam knows that p entails q, then it is also the case that  
Sam knows\* that q.

To bring CORNEA into conflict with Closure, the authors use a brain-in-vat scenario. I will simplify it a bit. Suppose you've stayed up late worrying that you might be a brain in a vat. You finally get to sleep, but wake up before dawn still worrying. A glance shows your bedside alarm

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9. My colleague Del Ratzsch poses this counterexample: the bomb expert holds his breath, cuts the red wire, and, still alive, says on this basis (p) "Whew, it appears that the bomb hasn't detonated." As stated, CORNEA says he's not entitled to say this (had the bomb detonated, his cognized situation wouldn't be different in any way discernible by him.) Tweaking from "would likely be different" to "would not likely be the same" may help here.

10. Getting the formulation right, which will vary with the operator involved, is no small task. I insert "also the case" as an aid to keeping closure principles distinct from transmission principles like the one in Gettier (1963), with which they are sometimes confused. Here see Peter Klein, "Closure Matters: Academic Skepticism and Easy Knowledge," in E. Sosa and E. Villanueva (eds.), *Philosophical Issues*, 14, 2004: *Epistemology*, pp. 166-170, and Jessica Brown, "Doubt, Circularity, and the Moorean Response to the Sceptic," in John Hawthorne (ed.), *Philosophical Perspectives* 19, 2005: *Epistemology*, pp. 2-4. I address Crispin Wright's ubiquitous confusions about this in a forthcoming APA paper: "The Illusion of Transmission: Where Wright Goes Wrong."

clock reading "5:59 A.M."—one minute before you set it to ring. You presently hear a ringing sound, and so have the new evidential input E:

(E) I am experiencing the familiar sound of my alarm clock ringing.

Now this seems to support the hypothesis

(R) The alarm clock next to my bed is ringing.

and CORNEA nicely allows this: after all, if the alarm next to your bed were not ringing, it's not expectable that you'd be experiencing that familiar ringing sound. The trouble arises because, despite your worries, you also believe:

(~BIV) I'm not an envatted brain wired to a super-sophisticated computer that simulates exactly this familiar ringing sound (along with the rest of my experience of the virtual day to follow).

Here it is crucial to see that BIV is not just a general brain-in-vat hypothesis. It is very specific: your envatted brain is connected to a computer that simulates the exact phenomenal reality of your alarm clock ringing (and the rest of your day). Let's call this the Phat-Vat Hypothesis.<sup>11</sup>

As the authors see it, the Phat Vat hypothesis gets CORNEA in closure trouble on account of three claims. Claim 1 is that, as we have seen, R (in relation to E) passes the CORNEA test: CORNEA thus allows that E can<sup>12</sup> seriously support the R. Claim 2 is that ~BIV flunks the CORNEA test, for if ~BIV were false (i.e., if you were a brain in the Phat Vat), your experience would not be different than it is. So CORNEA says that the experienced ringing cannot seriously

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11. I use the term "Phat" on the advice of my hip-hop savvy colleague Matt Halteman, who assures me that this fits the paradigm use of "phat" as a adjective predicated of hyper-accessorized cars ("pimp mobiles," I believe Matt called them) and the like.

12. CORNEA gives the test as a necessary condition of serious support, not a sufficient condition: it thus doesn't sanction "does" here.

support  $\sim$ BIV.<sup>13</sup> But—Claim 3—R obviously entails  $\sim$ BIV (and you see that it does). This gives traction to Closure: if E supports R, it must also support  $\sim$ BIV. CORNEA, the authors think, thus violates Closure.

The violation looks especially egregious in the appears mode. For here, the authors say, CORNEA entails that you can be entitled to say "It appears that my alarm is ringing" even though you are not entitled to say "It appears that I am not a brain in the Phat Vat (hearing a merely virtual alarm)." But how could this be? How could you be entitled to claim that it appears (epistemically) that A, see that A entails B, and yet not be entitled to claim that it appears that B? Indeed, the authors urge that by CORNEA, you can sometimes be entitled to say "It appears that A&B", see that A&B entails B, and yet not be entitled to say "It appears that B."<sup>14</sup> Deeming such closure-violations "intolerable," they rhetorically ask:

How could your total evidence support a conjunction while failing to support one of its conjuncts? How could you be evidentially better-off with respect to (p & q) than you are with respect to p?

### 3. Trouble in Closureville

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13. It is to be noted that the authors ground Claims 1 and 2 both rest on standard possible-world semantics for subjunctives. I originally meant the subjunctive to express probabilistic implications of theories, and the appropriateness of Lewis-Stalnaker semantics here needs scrutiny. At any rate, using standard semantics, the idea is that in the closest possible world where the alarm is not ringing, you do not hear it ringing, making it true (on the standard semantics) that if it were not ringing, your experience would be different. But in the closest possible world where you are in the Phat Vat, you do hear it ringing (this is part of what makes the Phat Vat hypothesis phat), so on standard semantics it is not true that if you were a brain in the Phat Vat, your experience would be different.
14. While the authors argue this using a complex scenario, it readily falls out of my simpler scenario. Since R entails  $\sim$ BIV, we can think of it as the conjunction of  $\sim$ BIV and R\*, where R\* is just that surplus content in R that goes beyond  $\sim$ BIV. The argument just given, then, "shows" that CORNEA entails that (R\* &  $\sim$ BIV) may be supported by my evidence even though one of its conjuncts ( $\sim$ BIV) is not. In its appears-variant, it thus seems that CORNEA egregiously entails that you can be entitled to say "It appears that R\* &  $\sim$ BIV, even though you are not entitled to say "It appears that  $\sim$ BIV."

But, as noted earlier, many these days see Closure itself as in trouble. The trouble has been spotlighted by the rise of contextualism, which seeks to exploit (and relieve) the pressure toward skepticism by scenarios of both the global brain-in-vat sort, and of a more local variety.

Reviewing a local scenario will open the territory I want to explore.

Dretske's well-known zebra case is as good as any. You are at the zoo in front of the zebra cage, looking at the striped equine therein. Common sense says that this visual data strongly supports, indeed allows you to know\*:

(Z) The animal in front of me is a zebra.

But (Z) entails, as you see, that

(~PID) The animal is not a donkey cleverly painted in stripes to look like a zebra.

Now if Closure holds, then if on looking at the striped equine in the cage you know Z, you also know\* that ~PID. But does your visual data really allow you to know\* that it's not a painted-in-stripes donkey? Many deem Closure here in trouble, for they judge it is clear that your data doesn't allow you to know this.<sup>15</sup> It doesn't, because "after all" (as Stewart Cohen puts it)<sup>16</sup>

that's just how it would look if it were a cleverly disguised mule.

So in the judgment of many, the look of the striped equine doesn't enable you to know\* ~PID, because "that's just how it would look if it were a cleverly disguised mule." But if this is a principled judgment, the underlying principle is something like this: the data can't enable you to know it's not an X, if the data is just how it would look if it were an X. But this principle is, heaven help us, just a version of CORNEA. From a wider view, then, the trouble which the

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15. The argument supposes that the observer can't tell zebras and donkeys apart by anatomical features other than coloration. We can of course always let the hypothesis posit a donkey—a Phat Donkey as it were—that has had whatever reconstructive surgery is needed to ensure this.

16. Stewart Cohen, "Contextualism and Skepticism," in E. Sosa and E. Villanueva (eds.), Philosophical Issues, 10, 2000: Skepticism, p. 99.

authors lay at CORNEA's feet is just what leads many to abandon Closure (and what drives yet others into the arms of contextualism).

#### 4. The Carnapian Distinction

CORNEA, we've seen, is meant to test claims that some alleged evidence E (our seeing no HIV-viruses on the needle) provides serious "rational support" for some hypothesis H (there being no HIV viruses on the needle). But what does "rational support" mean here? In first introducing CORNEA (and in later refining it), I distinguished between "weak" and "strong" senses of support.<sup>17</sup>

Let us say that evidence e weakly supports (or confirms) claim c when e makes c to some degree more likely to be true than it would have been on the antecedent evidence. And let us say that e strongly supports (or confirms) c when it increases the likelihood sufficiently to make c 'reasonable to believe' by a person who appreciates that evidence.' A parallel distinction can be drawn between a strong and weak sense of 'disconfirms.'

I then noted that both senses are "dynamic," and to be separated from a "static" sense of the term:

Both [strong and weak] senses of 'disconfirms' [and confirms] are dynamic, involving the degree to which the adduced evidence changes the likelihood of a claim from its likelihood on our background knowledge, and are thus to be distinguished from the 'static' sense (which Plantinga addresses) of the probability of a claim with respect to the adduced evidence alone.

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17. These distinctions are made in Section 1.3 (entitled "Rational Support") in Wykstra [1984

This dynamic/static distinction was made by Rudolph Carnap within a probabilistic approach to inductive logic.<sup>18</sup> Carnap observed that it is one thing for hypothesis H to be (statically) improbable on some body of evidence, and quite another thing for H to be rendered improbable by some new piece of evidence. Suppose that we are playing poker, that I am dealt a hand, and that I look at it and see contains no aces.<sup>19</sup> On my evidence, it is highly improbable that (H) you have four aces. In the static sense of "supports," my evidence supports this H. But that you have four aces has not, by my new evidence (seeing I hold no aces), become improbable or less probable. To the contrary, my seeing that I hold no aces raises the probability that you hold four aces: it renders this more likely than before. In the dynamic sense of supports (or confirms), my new evidence supports H: it changes its probability, and does so in the "upwards" direction.

Using the same example, we can see that the same distinction applies, in a kind of analogical extension, to a whole range of epistemic operators. Consider the epistemic operator "justified". Let E be the evidential situation of my having seen my new hand containing no aces. I am, on my evidence, justified in believing that you do not hold four aces. But I have not, by seeing my hand, become (more) justified in believing this about your hand. To the contrary, I have, by my new evidence, become somewhat less justified than before in believing this.

The distinction also applies to epistemic appears-claims. I am, when in the cognitive situation of finding that I hold no aces, entitled to say "It appears that you are not holding four

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18. Rudolf Carnap, Logical Foundations of Probability, 2nd Edition (Chicago: 1962), pp. 468-478. Rudolf Carnap (1962). Carnap's "Preface to the Second Edition," pp. xiii-xii, reviews relevant sections in which he tries, with uneven success as he sees it, to keep his terminology straight on this distinction. The relevance of Carnap's distinction to atheology was stressed by Edward Wierenga, "Reply to Harold Moore's 'Evidence, Evil, and Religious Belief,' in International Journal for Philosophy of Religion, 9, 1978: 246-251. In philosophy, it seems, we are always re-inventing the wheel.

19. David Anderson gives this example in his fine 2005 undergraduate honors thesis "Epistemic Humility and William Rowe's Evidential Argument from Evil," and in an unpublished paper "CORNEA Under Fire." David, a student of Graham and Maitzen at Acadia University, is cited by them in a footnote.

aces." But I have not, by this finding (or on the basis of it), become (more) entitled to say "It appears that you are not holding four aces. That is, my degree of entitlement to this claim has not, by my new finding, been increased; indeed it has been decreased.

I shall refer to Carnap's distinction, when extended in the above ways, as "the Carnapian Distinction" (or, better, the By/On Distinction! <sup>20</sup>

### 5. Applying the Carnapian Distinction

In Sections 2 and 3, we saw how the Phat Vat case seems to get not just CORNEA but also Closure in trouble. In that case, CORNEA says that E (your experiencing the ringing sound) can seriously support R (that you hear your real alarm clock ringing) but cannot seriously support  $\sim$ BIV (that you are not in a Phat Vat). But you see that R clearly entails  $\sim$ BIV, so Closure seems to require that if your experience supports R it also support  $\sim$ BIV. The trouble, we saw, looks especially bad in the appears idiom, allowing the authors to twist the knife:

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<sup>20</sup> Let me here slip in another explanation of it, cribbed from a paper ("The Illusion of Transmission: Where Wright Goes Wrong") to be presented at the Pacific Division APA Meeting in April:

The On/By Distinction. The key to Wright's Case is a point about confirmation. To probe it, we need a tool in hand. "Confirms," as Carnap taught us, has two senses. Evidence E "confirms" hypothesis H in (as I'll call it) a static sense when, on E, H has a probability above some threshold of interest, b. We may set b at .5, above which H is more probable than not, or at some higher value, indicative of when H becomes worthy of acceptance, assent, or some other positive cognitive stance. Put probabilistically, E statically confirms H just in case  $\Pr(H/E) > b$ , where b is the stipulated threshold of interest. Evidence E "confirms" H in a dynamic sense when, by adding E to our previous background knowledge k, the probability of H increases. Put probabilistically, E dynamically confirms H just in case  $\Pr(H/k \& E) > \Pr(H/k)$ .<sup>20</sup>

Carnap's distinction can be (but too rarely is) extended to other degreed epistemic properties. If some epistemic property (belief-worthiness, warrant, etc.) permits of comparisons of more or less, then it is one thing to say that, by some new evidence added to previous information, this property is increased. It's another thing to say that, on some body of evidence, the level of this property is (statically) above some threshold of interest. I shall refer to this extension of Carnap's distinction as the By/On Distinction.

How could your total evidence support a conjunction while failing to support one of its conjuncts? How could you be evidentially better-off with respect to (p & q) than you are with respect to p?

But the Carnapian Distinction uncovers equivocation here. What CORNEA says is that E can't support  $\sim$ BIV in the dynamic sense (though it may support R). It says that by my new evidence, I may become justified in believing R, but cannot become justified in believing  $\sim$ BIV.

CORNEA applies to the "dynamic" family epistemic operators. The crucial question is whether Closure also applies to these dynamic epistemic operators.

The correct answer is that they do not. To see this consider a conjunction like

(G&M): Graham is a citizen of a North American nation and Maitzen is a citizen of Borneo (picking this country at random).

Suppose I am at present now nowhere near being justified in believing G&M. I then meet Maitzen at the Central Division APA, and he assures me that he is from Borneo, showing me his Borneo passport. My new evidence E, by boosting M, may hugely boost the probability (justifiedness, etc.) of the conjunction G&M; yet it does nothing to boost the probability of the second conjunct.<sup>21</sup>

5.1 To spell this out a bit more, let me here slip in an argument from my critique of Crispin Wright on "transmission." On Wright's view (to give a brief context), "transmission" is that property an argument has just in case you can, by virtue of having a warrant for the premises and seeing that they entail a conclusion, thereby acquire a (first-time) warrant for believing the conclusion. Wright holds that transmission is what makes valid arguments of value to us (allowing us to use valid arguments in service of expanding our belief-corpus), but that warrant

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21. Graham and Maitzen, in a footnote expressing debt to Dave Anderson, seem on the verge of seeing this, but without seeing its relevance to their argument.

for premises does not always successfully "transmit" across seen entailments: whether it does or not depends on the person-specific context. My paper, after showing that in his key examples it is dynamic "confirmation" that is at issue, argues as follows:

But transmission in this sense is never successful. For take any "incremental fact" (fact added to my background information) that hugely boosts some claim P, and consider some C, randomly picked from the set of entailments of P. It will (I shall show) be a total crapshoot as to whether O boosts C, or debosts it, or is evidentially neutral toward it. From having an O that boosts P and seeing that P entails C, we can't say anything, even as a rule of thumb, as to whether O boosts C.

We can see this by a readily-generalizable example. Suppose that you've seen me across a room, heard me talk, and seen what a jerk I, Scott Stevens,<sup>22</sup> am. Suppose that, on these observations and your other grounding so far, it is 50/50 whether I am married or single.<sup>23</sup> But then, up close, you observe (O) that I wear a wedding band. Now O pretty much knocks out the hypothesis that I am a desperate aging bachelor jerk. Since this was your leading contender, it greatly boosts the probability that (P) I am married. But P clearly entails that (C1) Scott is not a grieving widower who lost his wife in recent months. And does O greatly boost C1? Not at all; indeed O arguably "debosts" C1, making the grieving widow hypothesis, unlikely as it is to begin with, a bit more likely than before. Similarly, P entails that (C2) Scott is not recently divorced by his wife for being a jerk but is in psychological denial. Does O boost C2? No; indeed, it arguably debosts C2 (by slightly boosting the divorcee-in-denial hypothesis). We can expand this list at will, and the example is entirely generalizable.<sup>24</sup> It shows that incremental boosting doesn't ever transmit in Wright's sense. That is, when it is a Joint Fact that O boosts some premise and one sees that P entails C, it is an utter crapshoot as to

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22 To meet APA "blind review" requirements, I here adopt a pseudonym.

23 My obvious jerkiness weighs especially toward my being single: who would ever marry this guy?

24 Before expanding the list let me put my point in a more general way. O's strongly confirming (boosting) P is typically a matter of O's disconfirming (debosting)  $\sim P$ . Here  $\sim P$  is equivalent to an exhaustive disjunctive set of various concrete rivals to P, and O typically debosts  $\sim P$  by knocking out some leading rival(s) R, that are the most serious contender(s) to P. But this tells us nothing about O's dynamic bearing on the other rivals to P, including any number of "minor" rivals. P entails that each of them is false, and yet O, boosting P by eliminating R, will boost some of them, debost others, and be irrelevant to others.

Thus, (P) "Scott Stevens is married" has as denial ( $\sim P$ ) "It is not the case the Scott Stevens is married," and this is equivalent to "Either (r1) Scott Stevens is a (jerky) bachelor, or (r2) Scott Stevens is a grieving widower, or (r3) Scott Stevens's wife divorced him but he is in denial, or ... (r413) Scott Stevens is an alien simulating a married human, or (r414) Scott Stevens is a fiction imposed on you by the matrix, or ...". The observation (O) that Scott Stevens wears a wedding band may greatly boost P by eliminating the most salient rival, but this tells us nothing about its bearing on any of the other rivals--though P entails that each of these is false too.

whether O boosts C, deboosts, or leaves it unchanged. The Joint Fact gives one no basis for even a presumption of warrant-boosting for C. But as we saw earlier, Wright wants to have his transmission and eat (or restrict) it too. He wants a strong positive transmission dynamic as a rule, so that failures of transmission are exceptions to the rule. But shifting to incremental boosting loses the positive dynamic: his cake (and case) thus collapses.

My thesis, then, is that Closure doesn't hold for dynamic "supports"; it pertains to static senses only.<sup>25</sup> It says that if you see that R entails  $\sim$ BIV, then it is not possible for you, on some specified body of evidence, to be (statically) justified in believing R, and also to be unjustified in believing  $\sim$ BIV. Closure and CORNEA thus pertain to different things. Returning now to the trouble-making counterexamples, let us see in more detail whether, when Closure is properly Carnapped, the trouble is reduced.

## 6. Letting the Donkey Out of the Cage.

Current contextualist theories get much appeal from their offer to explain our conflicting intuitions about local skeptical paradoxes of the "painted donkey" sort. It is interest, therefore, whether these paradoxes get some of their grip from neglecting the Carnap Distinction. To see how they might, let's first generate the paradox in a deliberately conflationary "when seeing" locution:

When seeing the striped critter in the cage, I am justified in believing I see a zebra. That I see a zebra entails that I am not seeing a cleverly painted-in-stripes donkey ( $\sim$ PID), so I must (by closure) be justified in believing it too. But how,

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25. In the probabilistic idiom, closure says that if R has a probability over .5 (or some other threshold of interest) on some data of interest, then anything R entails also has a probability of at least .5 on this same data. This is a well known rule in confirmation theory. Failure to see it holds only for the static sense vitiated Rowe's first (never published) objection against CORNEA, answered in my (never published) "Difficulties in Rowe's Case for Atheism (and in one of Plantinga's fustigations against it)", read on the Queen Mary in 1981.

when seeing the zebra-looking critter, can I be justified in believing that I'm not seeing a cleverly painted donkey? After all, this is just how things would look if it were a cleverly-painted donkey?

Here the locution "when seeing" deliberately obscures the distinction between saying "On observing O, I am justified in believing B" and saying "By observing O, I become justified in believing B." We are then immediately torn between an intuition grounded on Closure and one grounded on CORNEA. The Carnapian Distinction allows us to describe the situation more discerningly in terms of two complementary truths, T1 and T2:

It is true that (T1) by seeing the striped critter in the cage, I can become justified in believing that (Z) I see a zebra, even though, by seeing this, I cannot become justified in believing it is not a painted-in-stripes donkey. (This is, after all, just how it would look if it were a painted donkey, so by CORNEA it's looking that way cannot (dynamically) render me justified in believing it's not one.). But it is also true that (T2) if, on my evidence I am justified in believing that it is a zebra in the case, I am also, on this evidence, justified in believing it is not a painted-in-stripes donkey in the cage. (For I see that the first believed proposition entails the second, and on my evidence I am justified in believing the first, so by Closure I am also justified in believing the second.

Here again, as in the Phat Vat case, the apparent conflict between CORNEA and Closure has evaporated. Indeed, using the two principles in tandem allows us to identify the conditions under which both truths can hold. Suppose I do, by observing the cage, become fully justified in believing that a zebra is in the cage—so that, by Closure, I am also (seeing the obvious entailment) justified in believing that ( $\sim$ PID) it is not a painted-in-stripes donkey in the cage.

CORNEA says that I cannot, by new input E, have become justified in believing  $\sim$ PID.

Accordingly, this proposition must be something that it was justified for you to believe before, or independently of, the new input E.

Let TE be your total evidence, consisting both of the evidence T that you have apart from looking in the cage, and your new evidence E of what you see on looking in the cage. CORNEA says that E has no boosting power with respect to  $\sim$ PID, so that if you are now justified in believing  $\sim$ PID, it is by virtue of what was available to you before input E—on, in other words, your background evidence T.<sup>26</sup>

Does this Carnapian solution fit our common sense intuitions? I venture that for painted donkeys, it does. So far as I can see, our background evidence gives us no reason to think that there has ever been, in the entire history of the universe, a painted donkey substituted for a zebra in a real zoo. If this is so, the new visual data of seeing a striped equine in the zebra cage may be needed to rule out the possibility that the zebra is convalescing at the animal hospital, or out for breeding; it won't need to rule out there being a painted donkey in the cage.<sup>27</sup> That hypothesis is a non-starter before you've bought your ticket.

## 7. Escaping the Phat Vat.

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26. In showing the relevance of the Carnapian distinction here, I do not mean to be claiming that the distinction entirely resolves the puzzle arising in such cases. My claim is only that the distinction, by eliminating a specious source of paradox, promises to help clarify any remaining deeper source of paradox.

27. I am not yet endorsing a contextualist account what makes alternative possibilities relevant. The Carnapian Distinction itself helps ease the tensions that make contextualism so attractive.

Does this line of analysis also work for Phat Vat cases? The difficulty here, as Stewart Cohen notes, is that the "global" character of a Phat Vat hypothesis seems to absorb in advance any possible evidence against it.<sup>28</sup> How then it be antecedently improbable on one's total evidence?

Here I think it helps to fill in BIV scenario's so as to "amplify" the BIV possibility less mind-numbingly small. Suppose, in the scenario sketched earlier, that you are Neo, of Matrix fame, acclaimed as "The One" by your fawning band of grungy rebels. And suppose that the reason you stayed up so late is that your total evidence, T, includes recently-acquired compelling evidence that the Matrix has been capturing your rebel comrades one by one, debodifying them and envattning their brains, and wiring the brains in phat vats so to give them a perfectly simulated virtual rebel life. (Your evidence consists of having recently found the vats, with the lifeless debrained corpses of your friends nearby, and of having entered—using your Neotic powers—into their new virtual worlds, so as to see what their current virtual realities are.) It is this total evidence that has kept you up late, brooding about the very real possibility that you yourself have now been captured and similarly envatted.<sup>29</sup> Indeed, given the apparent rate of disappearance of your friends, you correctly gauged this as having at least a probability of .01. It is about this that you are again brooding as you now (E) hear the familiar sound of what you hope is your 6:00 a.m. alarm clock going off, and form the belief (R) that you are hearing your real alarm clock ringing.

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28. Cohen, "Contextualism and Skepticism" (see note 16), p. 103. Cohen considers biting the bullet by appealing to a priori probabilities; I find this helpful, but suggest (below) incorporating it within an appeal to an "evidential continuum."

29. You realize, of course, the cruel anti-irony that if you currently are envatted, the Matrix is tormenting you with a virtual reality giving you non-veridical evidential omens of your plight. Your evidence may not be veridical, but you are damned if it isn't even more than if it is.

Properly Carnapped, Closure and CORNEA tell a coherent story here. CORNEA dictates that your new experiential input does not and cannot "dynamically" justify you in believing  $\sim$ BIV: you cannot, by E, become justified in believing  $\sim$ BIV. Hence, if, on your disturbing prior evidence T, it is unjustified for you to believe  $\sim$ BIV before hearing the ringing, then it also unjustified for you to believe this after hearing the ringing. Now, if hearing the ringing sound sufficiently increases your justifiedness in believing R, to the point of your becoming justified (on your total evidence) in believing this, then Closure dictates that you are, on your total evidence, also justified in believing  $\sim$ BIV. But Closure does not say what makes you justified in believing this latter claim: it doesn't say, most crucially, that your new ringing-sound evidence plays any dynamic evidential role here. Closure thus leaves open the possibility that the the ringing-sound dynamically makes you justified in believing R only if you were, on T alone, already justified in believing  $\sim$ BIV. This possibility satisfies both CORNEA and Closure.

But how could T "improbabilize" an all-absorbing global Phat Vat hypothesis, so as to make it a non-starter? This must remain the big question, but here I find our amplified Neo tale at least suggestive. It suggests that we can imagine possible worlds, not so very unlike our own, in which we have, to degrees that we can imaginatively vary up or down at will, much more empirical evidence than we now have that there exist superior beings (envatters) doing brain-in-vat enslavements of humans. We can similarly imagine worlds where we have less evidence for this than we now have (worlds where, for example, we lack our current knowledge about technology producing sensations by electrical stimulation of the cortex, or about the billions of galaxies around us). Since our actual world is on this evidential continuum, we are not in an evidential vacuum about the general hypothesis that there are BIVers, and our actual evidence surely tilts very strongly against this general hypothesis. And the Phat Vat hypothesis, due to its highly

specific character, may occupy such a small possible-world space within this general hypothesis, as to give it, relative to the general hypothesis, an infinitesimally small logical probability. These are, of course, hard matters to discern clearly: how empirical and logical probabilities interact is obscure terrain, and here we perhaps just do not know our way about. But I do not see that the global character of a phat-vat hypothesis precludes that our total evidence justifies us in believing we are not in a phat vat. Nor does CORNEA preclude this, since it addresses only dynamic support from situational new evidential input, not static support on total evidence.

#### 8. Graham and Maitzen's Argument.

My aim here has been to use the Carnapian Distinction to reduce Closure befuddlement, allowing Closure to harmonize with CORNEA. I now turn to specifics in Graham and Maitzen's argument. I see two main missteps here. First, after quoting the 1984 official formulation of CORNEA (see Section 1 above), the authors say: "Wykstra offers CORNEA as a necessary condition for being "entitled to assert claims of the form it appears that p." But this isn't right. In the official formulation, the "only if" clause within CORNEA is posited as necessary condition for being entitled to an appears-claim on the basis of some specified input from a cognized situation. This basis-relation is to be understood in the dynamic sense of "supports" to which, in the sections preceding the official formulation, I gave much attention. The authors are for this reason mistaken in claiming that one cannot, given CORNEA, be entitled to assert "It appears that I'm not a brain in the Phat Vat" when in the situation described above. CORNEA entails only that I cannot become entitled to assert this, on the basis of the new evidential input of the situation.

This connects closely to a second mistake. The authors note that in their complex Phat Vat case, the CORNEA condition is satisfied for a conjunction but not for one of its conjuncts: this is correct even in simpler cases, as we have seen (see note 14). But they take this as a reductio, posing a question meant as rhetorical:

. . . how could you satisfy CORNEA for asserting [p] a conjunction even when one of its conjuncts does not—indeed, cannot—epistemically appear to you to be true? This result is bad enough by itself, especially in light of the evidential sense of “appears” that Wykstra invokes: how could your total evidence support a conjunction while failing to support one of its conjuncts? How could you be evidentially better-off with respect to (p & q) than you are with respect to p?

But the CORNEA requirement is for dynamic epistemic operators only. In the Phat Vat situation, not passing the CORNEA test thus doesn't mean that (italics mine) "your total evidence fails to support q (though it supports p&q)," nor that you are "overall better off with respect to p&q than with respect to q . . ." It means only that your new evidential input cannot dynamically boost q, (though it may dynamically boost p&q); it cannot "boost" you into being epistemically better off than you were before with respect to q (though it may do so for p&q). And the Carnapian Distinction has allowed us to see that this does not violate Closure, once this is duly restricted to static epistemic operators.

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## 1 CORNEA AND CLOSURE

Andrew Graham and Stephen Maitzen

Could our observations of apparently pointless evil ever justify the conclusion that God does not exist? Not according to Stephen Wykstra, who several years ago announced the “Condition of Reasonable Epistemic Access,” or “CORNEA,” a principle that has sustained critiques of atheistic arguments from evil ever since.<sup>1</sup> Despite numerous criticisms aimed at CORNEA in recent years, the principle continues to be invoked and defended.<sup>2</sup> We raise a new objection: CORNEA is false because it entails intolerable violations of closure.

Wykstra offers CORNEA as a necessary condition for one’s being entitled to assert claims of the form “It appears that  $p$ .” He seeks to retain the virtues of Richard Swinburne’s account of “the ‘seems so, is so’ presumption” while rejecting what he regards as Swinburne’s arbitrary distinction between “positive” and “negative” seemings, a distinction he derides as “Swinburne’s Slip”: “Since the distinction between positive and negative seemings depends so much upon formulation, it is hard to see how it can have the epistemic bite Swinburne gives it.”<sup>3</sup> His alternative, CORNEA, runs as follows:

On the basis of cognized situation  $s$ , human  $H$  is entitled to claim “It appears that  $p$ ” only if it is reasonable for  $H$  to believe that, given her cognitive faculties and the use she has made of them, if  $p$  were not the case,  $s$  would likely be different than it is in some way discernible by her.<sup>4</sup>

According to Wykstra, CORNEA applies to the “epistemic” sense of “appears” rather than to the merely phenomenal sense of the word; in the epistemic sense of “It appears that  $p$ ,” he writes, “I take there to be an evidential connection between what I am inclined to believe (namely, that  $p$ ) and the cognized situation that inclines me to believe it.”<sup>5</sup> He concludes that atheistic arguments containing premisses of the form “It appears that such-and-such evil is pointless” (such William L. Rowe’s well-known argument from evil) cannot even get started, since CORNEA prevents any human being from properly asserting even the apparent pointlessness of any instance of evil. Why? Because, says Wykstra, the purposes of an omniscient God, if there is one, in permitting evil probably fall outside our limited ken; thus it is not reasonable for any of us to believe that we would always see the point of God’s permitting evil even if it always had a point. Granted, the agonizing and terminal suffering of a fawn burned in a remote forest fire<sup>6</sup> may seem to serve no greater good, but it would seem that way to us even if it served a greater good that we are too ignorant to detect. So, on CORNEA, we have no business saying it appears to be pointless, in the epistemic sense of “appears,” and without even apparently pointless evil to invoke, standard evidential arguments from evil founder.

Critics have raised various objections to CORNEA, but none, as far as we know, have focused adequately on the subjunctive conditional clause in Wykstra’s principle: “if  $p$  were not the case,  $s$  would likely be different than it is in some way discernible by [ $H$ ].” This clause closely resembles the well-known subjunctive “sensitivity” condition on knowledge<sup>7</sup> championed by Dretske and Nozick, and its presence in CORNEA therefore poses a familiar problem: satisfaction of CORNEA will fail to be closed under known implication. For instance, a subject  $H$  can satisfy CORNEA for “It appears to  $H$  that ( $p$  &  $q$ )” while failing to satisfy CORNEA for “It appears to  $H$  that  $p$ ,” even when  $H$  knows, as  $H$  typically will, that ( $p$  &  $q$ ) implies  $p$ . CORNEA thus violates closure, a defect many regard as fatal for those analyses of knowledge on which knowledge must be sensitive.

Let “ $R$ ” denote the proposition that you are an embodied person who is reading right now, and let “ $BIV$ ” denote the brain-in-a-vat hypothesis, according to which you have recently and unknowingly become a disembodied brain-in-a-vat being electrochemically fed exactly the experiences you are now having.  $BIV$  is deliberately designed to make its truth indistinguishable, by you, from its falsity. Presumably, you now satisfy CORNEA for asserting

- (1) It appears that ( $R$  &  $\sim BIV$ ),

because if ( $R$  &  $\sim BIV$ ) were false,  $R$  would be the only false conjunct, and you would discern its falsity: in the closest possible worlds in which  $\sim(R$  &  $\sim BIV)$ , you are an embodied person whose experiences make you aware that you are doing something other than reading right now (maybe you’ve just put aside this essay). Hence it is reasonable for you to believe that, given your cognitive faculties and the use you have made of them, if ( $R$  &  $\sim BIV$ )

were not the case, things would look different to you from the way they now look. However, while you satisfy CORNEA for (1) and also for

- (2) It appears that R

(since, as before, if R were not the case, things would look different to you), you fail CORNEA for

- (3) It appears that ~BIV.

Again, BIV stipulates that you cannot perceptually distinguish worlds where you are a brain-in-a-vat from worlds where you are normally embodied. Apprised of this stipulation, you cannot reasonably believe that, given your cognitive faculties and the use you have made of them, if BIV were the case then your “cognized situation ... would likely be different than it is in some way discernible by [you].”

Thus you satisfy CORNEA for asserting a conjunction even when one of its conjuncts does not—indeed, cannot—epistemically appear to you to be true. This result is bad enough by itself, especially in light of the evidential sense of “appears” that Wykstra invokes: how could your total evidence support a conjunction while failing to support one of its conjuncts? How could you be evidentially better-off with respect to ( $p \ \& \ q$ ) than you are with respect to  $p$ ?<sup>8</sup> But this particular defect betokens a quite general failure of closure. Every rational person who understands the relevant concepts knows, at least tacitly, that a conjunction implies each of its conjuncts; thus satisfaction of CORNEA violates closure not just under implication but also under known implication: you satisfy CORNEA for “It appears that ( $p \ \& \ q$ )” while necessarily failing it for “It appears that  $q$ ” even though you know that ( $p \ \& \ q$ ) implies  $q$ .

Similarly implausible results are not far to find. While you satisfy CORNEA for “It appears that R,” you cannot satisfy CORNEA for “It appears that I am not mistaken in now judging that R,” since it is not reasonable for you to believe the following: “Were I mistaken in now judging that R, things would look different to me.” On the contrary, if you were mistaken in that occurrent judgment, your mistake would arise from a cognitive situation relevantly like the one you are now having, namely, one causing you now to judge that R.<sup>9</sup> In general, you can satisfy CORNEA for asserting “It appears that  $p$ ” even when you fail the condition for asserting “It appears that I am not mistaken in now judging that  $p$ ,” a damning result given that “ $p$ ” obviously implies the wide-scope negation “I am not mistaken in now judging that  $p$ .” Nor, finally, can Wykstra exploit the difference (if there is a principled difference) between the “positive” appearance-claim “It appears that  $p$ ” and the “negative” appearance-claim “It appears that I am not mistaken in now judging that  $p$ ” without by his own lights committing Swinburne’s Slip.

One might respond by emphasizing that CORNEA is only a necessary condition, not a sufficient condition, for being entitled to assert appearance-claims: being so entitled may require the fulfillment of further conditions as well. But our argument never assumes otherwise. We need not assume that CORNEA by itself entitles you to assert “It appears that ( $p \ \& \ q$ )” while it precludes your asserting “It appears that  $p$ ,” for some  $p$  and  $q$ . Nor need we assume that CORNEA by itself entitles you to assert “It appears that  $p$ ” while it precludes your asserting “It appears that  $q$ ” for some  $q$  you know is implied by  $p$ . In its present form, CORNEA certainly does nothing to discourage those two assumptions, but it does not imply them either.<sup>10</sup> Instead, we urge the rejection of any evidential test which (i) you can pass for a conjunction while failing—indeed, necessarily failing—for one conjunct and (ii) you can pass for  $p$  while (necessarily) failing for some  $q$  you know to be implied by  $p$ . CORNEA is such a test. If atheistic arguments from evil fail, it is not because they violate Wykstra’s false constraint on the assertion of appearance-claims. Alas, a sensitive CORNEA is a major disability.

Graham and Maitzen's Notes:

1. See Stephen J. Wykstra, “The Humean Obstacle to Evidential Arguments from Evil: On Avoiding the Evils of ‘Appearance’,” *International Journal for Philosophy of Religion* 16 (1984), 73–93. Wykstra’s original target is William L. Rowe, “The Problem of Evil and Some Varieties of Atheism,” *American Philosophical Quarterly* 16 (1979), 335–341.
2. Critical treatments include Keith Chrzan, “Debunking CORNEA,” *International Journal for Philosophy of Religion* 21 (1987), 171–177; Daniel Howard-Snyder, “Seeing Through CORNEA,” *International Journal for Philosophy of Religion* 32 (1992), 25–49; and Jim Stone, “Evidential Atheism,” *Philosophical Studies* 114 (2003), 253–277. For further invocation and defense of CORNEA, see Bruce Russell and Stephen Wykstra, “The ‘Inductive’ Argument from Evil: A Dialogue,” *Philosophical Topics* 16 (1988), 133–160; Stephen John

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Wykstra, "Rowe's Noseeum Arguments from Evil," *The Evidential Argument from Evil*, ed. Daniel Howard-Snyder (Bloomington: Indiana University Press, 1996), 126–150; and Stephen Wykstra, "Stone-Ground CORNEA: A Rebuttal," presented at the Central Division Meeting of the American Philosophical Association, 24 April 2004.

3. Wykstra, "The Humean Obstacle," 83, 84.
4. Wykstra, "The Humean Obstacle," 85.
5. Wykstra, "The Humean Obstacle," 87.
6. See Rowe, "The Problem of Evil," 337.
7. According to the sensitivity condition, roughly, you know that *p* only if you would not believe that *p* if it were false that *p*.
8. This point is not to be confused with the harmless Bayesian result, apparently overlooked by Stone ("Evidential Atheism," 264), that a given piece of evidence can increase the probability of a conjunction without increasing the probability of each of its conjuncts and even while decreasing the probability of each of its conjuncts. We thank David Anderson for drawing our attention to the latter result.
9. In the closest possible worlds in which you genuinely but mistakenly now judge that you are reading (these worlds need not be close tout court), you are, say, dreaming or hallucinating that you are reading, and the illusion is evidently good enough to fool you. In claiming that you now judge that *R*, we presume that our merely broaching the topic suffices to induce in you that occurrent judgment.<sup>108</sup> Wykstra himself sometimes leaves the impression, presumably unintended, that satisfying CORNEA is sufficient for legitimately asserting appearance-claims: "Seeing no elephant in a normal room, after looking hard, gives us good reason to believe no elephant is in the room" (Russell and Wykstra, "A Dialogue," 143, emphasis added); "Looking around my garage and seeing no dog entitles me to conclude that none is present, but seeing no fleas does not..." (Wykstra, "Rowe's Noseeum Arguments," 126, emphasis added).