Inference to the Best Explanation and the External World:
A Defense of the Explanationist Response to Skepticism

by

Kevin McCain

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Professor Earl Conee
and
Professor Richard Feldman

Department of Philosophy
Arts, Sciences and Engineering
School of Arts and Sciences

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Dedication

For my family
Curriculum Vitae

Kevin McCain was born in Cairo, Illinois on December 5, 1980. He attended Southeast Missouri State University from 1999 to 2004, and he graduated in 2004 summa cum laude with a Bachelor of Arts degree in Philosophy and a Bachelor of Science degree in Psychology. He went to the University of Missouri-Columbia in 2005 and received a Master of Arts degree in Philosophy in 2007 under the direction of Peter Markie.

Kevin came to the University of Rochester in the fall of 2007 to continue his graduate studies in philosophy under the direction of Professor Earl Conee and Professor Richard Feldman. He earned a Master of Arts degree in Philosophy from the University of Rochester in 2010.
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Abstract

Inference to the best explanation provides a promising response to the threat of external world skepticism. An attractive version of this sort of response to skepticism is what I call the “Explanationist Response”. The Explanationist Response involves arguing that our commonsense view that there is an external world composed of mind-independent objects is the best explanation of the involuntary and spontaneous nature of our sensory experiences as well as their coherence with one another. Since it is rational to believe that the best explanation of these features of our sensory experiences is true, we can have knowledge of the external world. This Explanationist Response to skepticism is often gestured at as a promising way of responding to skepticism, but for too long it has remained a schema for how a successful response to skepticism might go rather than a full-fledged response to skepticism. This thesis takes important steps toward transforming the Explanationist Response from an outline into a complete reply to skepticism and defends the Explanationist Response from a variety of objections.
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Introduction

One of the seminal problems of epistemology is the problem of responding to the threat of external world skepticism. A promising response to this threat involves arguing that our commonsense view of the world (CS) is the best explanation of several important features of our sensory experiences. Although this “Explanationist Response” is not a new idea and it has been suggested as a response to external world skepticism by a number of philosophers, it has largely remained a schema for a response to the threat of skepticism instead of a full-fledged response.\(^1\) My goal is to transform the Explanationist Response from mere outline into a complete response to the threat of external world skepticism and to defend the Explanationist Response from objections that have been leveled against it.

Chapter one consists in confronting important preliminary issues that require attention before the Explanationist Response can be fruitfully developed. In this chapter I do two things. First, I distinguish various kinds of skepticism and explain the exact form of external world skepticism that is the target of the Explanationist Response. Second, I examine the relationship between two prominent skeptical arguments, *Closure* and *Underdetermination*. I argue that although it is reasonable to think that these two arguments are distinct forms which the threat of external world skepticism

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skepticism may take, it is plausible that *Closure* must appeal to an additional skeptical argument, such as *Underdetermination*, in order to be effective. Given these considerations, I conclude that focusing on how the Explanationist Response can demonstrate the unsoundness of *Underdetermination* is a worthy endeavor.

The focus of chapter two is a close examination of *Underdetermination*. I begin by arguing that *Underdetermination* cannot serve the skeptic’s purposes because it is reliant upon an implausible underdetermination principle. Additionally, I argue that an improved version of this argument, *Underdetermination*, which relies upon a more plausible underdetermination principle, is also unacceptable. *Underdetermination* is problematic because it is incomplete. A key premise of *Underdetermination* needs to be supported by a sub-argument. So, I suggest that the best way to proceed is for the skeptic to make use of *Underdetermination-E*, which adds the needed sub-argument to *Underdetermination*. I go on to argue that close examination of *Underdetermination-E* reveals several challenges facing the skeptic in supporting his argument. First, the skeptic needs to provide a skeptical alternative to CS that is both empirically equivalent to CS and yet distinct from CS. Though the skeptic can accomplish this task, it is important to note that doing so is not a trivial matter. Second, the skeptic faces serious difficulties motivating a key premise of *Underdetermination-E*. Difficulties arise because the general principle of which this premise is an instance is contentious. There are some strong arguments for the conclusion that an unrestricted formulation of the general principle is false. At the very least, consideration of the arguments against this general principle demonstrate
that the skeptic must make his attack on CS using a particular version of
*Underdetermination-E*. These insights help to make the target of the Explanationist
Response clearer.

In chapter three I explain four criteria, which a successful response to external
world skepticism should satisfy. The first criterion is to explain what is wrong with
the skeptic’s argument. The second is to provide a plausible explanation, or
explanations, for why we sometimes find skeptical arguments worrisome. The third
criterion is to allow for ordinary people to have justification for their external world
beliefs in ordinary situations. The fourth criterion requires a reasonable explanation,
or explanations, of how we can retain our justification when faced with the threat of
skepticism. I argue that the Explanationist Response, if correct, can satisfy all four of
these criteria.

Chapter four adds to the work of the previous chapters by providing the
needed support for the central claim of the Explanationist Response, that CS is the
best explanation of the features of our sensory experiences. I present two
considerations in favor of this claim. First, I argue that there is good reason to accept
Jonathan Vogel’s (2008) *reductio ad absurdum* argument that CS is the best
explanation of the features of our sensory experiences. Second, I argue that there is
good reason to believe that CS is the best explanation of the features of our sensory
experiences because it fairs better with respect to explanatory virtues than all of its
skeptical rivals. Each of these considerations alone provides a good reason to believe
that CS is the best explanation of the features of our sensory experiences. Together
these considerations make a very strong case in support of CS as the best explanation of the features of our sensory experiences, thereby showing that it is reasonable to accept the Explanationist Response.

In the fifth, and final, chapter I examine several common objections that have been made against replies to external world skepticism that rely on inference to the best explanation. I argue that none of these objections poses a problem for the Explanationist Response. Given the support in favor of the Explanationist Response provided in previous chapters and the fact that it is not made less plausible by any of the objections described in this chapter, I argue that it is reasonable to conclude that the Explanationist Response is a successful response to the threat of external world skepticism.
Chapter 1: Skeptical Arguments and Underdetermination

“He must either be a fool, or want to make a fool of me, that would reason me out of my reason and senses”

1.1 Introduction

Many philosophers are sympathetic to the idea expressed by Thomas Reid in the quote above—some varieties of skepticism are a bit ridiculous. The average person will tell you that most, if not all, forms of philosophical skepticism are absurd. She will tell you that anyone who truly believed that he could not know, or that he lacked justification for believing, that other people have minds or that there is a world external to his mind or that the world is more than five minutes old, etc. should not be argued with, he should be committed to a psychiatric hospital. Despite the seeming ridiculousness of various forms of skepticism and the common person’s pity for the committed skeptic, some arguments for skepticism are worth taking seriously. The challenges that these arguments pose force us to think more carefully about the things we take ourselves to know (have justification for) and about the nature of various epistemic concepts such as knowledge and justification. Thus, the error of underestimating the philosophical importance of skeptical arguments should be

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2 Thomas Reid (1764/1997) pg. 24

3 For example, David Lewis (1996, pg. 549) says with respect to our everyday lives “We have all sorts of everyday knowledge, and we have it in abundance. To doubt that would be absurd.” and Timothy Williamson (2005, pg. 681) claims that “Skepticism is a disease in which healthy mental processes run pathologically unchecked.”
avoided. Another error that is to be avoided is overestimating the strength of the skeptic’s case. While I think that many skeptical arguments are extremely important, I share Alex Byrne’s (2004) assessment of the skeptic: he is “just another guy with a bad argument.” Although skeptical arguments are unsound, carefully examining the skeptic’s argument and explaining where and why it goes wrong as well as explaining why the skeptic’s argument often has the ability to trouble us is instructive and immensely useful for furthering our understanding of various epistemic concepts as well as for furthering our understanding of ourselves as epistemic agents.

A useful way of understanding the project of responding to the challenge posed by skepticism is as playing a game with the skeptic. The skeptic tries to win the game by showing we lack knowledge or justification of a particular sort, which we take ourselves to have. The anti-skeptic tries to win by showing that the skeptic is mistaken. As with any game it is nigh impossible to win if you do not understand the nature of the game and how it is played. Thus, before beginning the game with the skeptic, a little pregame preparation is in order. The requisite pregame preparation will involve two things: determining the game being played and determining how the game will be played. First, in order to determine the game being played one must get

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4 I think Barry Stroud (1984, pg. 39) is in danger of committing this error when he says that skepticism “appeals to something deep in our nature and seems to raise a real problem about the human condition.”

5 Pg. 299

6 I borrow the game analogy from Byrne (2004).
clear about what exactly the skeptic is arguing against. Second, in order to determine how the game will be played one needs to examine the structure of the arguments that the skeptic employs in his attempt to win the skeptical game. This chapter will constitute a part of the pregame preparation, which will improve the chances for beating the skeptic at this game in later chapters. More specifically, in this chapter I will explore various skeptical challenges and explicate the particular form of skepticism that I will attempt to refute in later chapters. Additionally, I will examine the relationship between two popular forms of skeptical arguments and argue that while it is reasonable to think that these two arguments are distinct, it is not implausible to think that they both require an appeal to an underdetermination principle. Thus, there is sufficient motivation for my concentration on responding to skeptical arguments that make use of underdetermination principles.

1.2 Kinds of Skeptical Challenges

Skepticism comes in many shapes and sizes. In order to get clear about the particular kind of skeptical argument that I will be responding to it is important to draw various distinctions between kinds of skepticism. The first two distinctions that I will draw are concerned with the target of the skeptic’s attack.

First of all, skeptics differ regarding which of our epistemic concepts they target with their arguments. One distinction to draw on this score is between what Richard Fumerton (1995) calls “weak” and “strong” skepticism.⁷ According to

⁷ Pg. 29
Fumerton, weak skepticism is skepticism that takes knowledge as its target and strong skepticism is skepticism that takes justification as its target. That is to say, weak skeptical arguments are arguments for the conclusion that we lack knowledge in some domain, while strong skeptical arguments are arguments for the conclusion that we lack justification in some domain. The latter variety of skepticism is considered strong because it is widely assumed that justification is necessary for knowledge, but not vice versa.

8 Fumerton notes that by “justification” he is referring to what “one can or cannot rationally believe” (pg. 29). So, the conclusion of a strong skeptical argument is that we are not rational in believing the propositions in some particular domain. It is important to note that S’s being rational in believing that p does not entail that S has a level of epistemic support for believing that p that is sufficient for knowledge. So, I will understand ‘justification’ as the level of epistemic support that makes belief rational, which is lower than the level of epistemic support required for knowledge.

9 Some have questioned the claim that justification is necessary for knowledge. See for example, Alston (1989b), Dretske (1981), Lewis (1996) and Nozick (1981). Though each of these philosophers have questioned this, it is important to note, as Alston (1989a) does, there are many conceptions of justification in the literature. So, it is not clear that those philosophers who deny that justification is necessary for knowledge are referring to the same thing as Fumerton.

10 Some would challenge the claim that knowledge is not necessary for justification. For instance, those who endorse Williamson’s (2000) view that one’s evidence just is what one knows would maintain that knowledge is necessary for justification. However, whether one agrees with the rationale for terming one kind of skepticism “strong” and the other “weak” does not impugn the fact that the distinction is a useful one to make.
Although Fumerton’s distinction is helpful, it does not account for the important distinction between propositional justification (having good reasons for believing a proposition) and doxastic justification (believing a proposition on the basis of good reasons). Thus, it will be useful to supplement Fumerton’s distinction by further distinguishing between two kinds of strong skepticism: strong skepticism about propositional justification and strong skepticism about doxastic justification. The former kind of skepticism argues that we do not have good enough reasons to believe certain propositions while the latter argues that various beliefs that we have are not believed on the basis of good enough reasons to be justified. I will refer to the former as ‘strong_p skepticism’ and the latter as ‘strong_d skepticism’. At this point distinctions have been made between weak skepticism, strong_p skepticism, and strong_d skepticism.

Another useful distinction drawn by Fumerton (1995) is the distinction between “global” and “local” skepticism. Fumerton explains, “The global skeptic makes a claim about our epistemic access to all truth”, whereas the local skeptic makes a claim about our access to truth “with respect to a given class of propositions.” For example, combining this distinction with the previous one, a weak global skeptic is a skeptic who claims we do not have knowledge of anything

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and a weak local skeptic is a skeptic who claims that we do not have knowledge of a particular set of propositions such as propositions about the external world.

Again, Fumerton’s helpful distinction requires a bit more fineness of grain to be satisfactory. It is useful to distinguish between two kinds of local skepticism, what I will call ‘full local skepticism’ and ‘partial local skepticism’. Full local skepticism makes a claim about all propositions within a particular class. Partial local skepticism makes a claim about some, but not all, propositions within a particular class. Concerning the external world, full local skepticism makes a claim about all external world propositions, while partial local skepticism makes a claim about a proper subset of external world propositions.

The next two distinctions concern the skeptic’s methods for making his attack. The first of these distinctions is between what Jonathan Vogel calls “domestic” and “exotic” skepticism. The domestic skeptic attempts to arrive at his conclusion without contesting the legitimacy of our epistemic principles. As Vogel (2005) claims, the domestic skeptic attempts “to show that, by our own lights, we lack the knowledge [or justification] of the world that we think we have.” So, the domestic skeptic does not contest any of our normally accepted methods of reasoning nor does he contest our principles concerning what is required for knowledge or justification. The exotic skeptic not only disputes the quality of our epistemic access to a class of propositions, but also the legitimacy of the principles which we rely on in making our

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13 Vogel (2004) and (2005)

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epistemic judgments. Thus, the exotic skeptic may question the adequacy of our accepted requirements for things like knowledge and justification as well as the legitimacy of our methods of reasoning. The Humean skeptic who questions the legitimacy of inductive reasoning is an example of an exotic skeptic.

The second distinction concerning the skeptic’s methods is really an instance of the distinction between domestic and exotic skepticism. However, I think this particular instance of the domestic/exotic distinction deserves special mention. The distinction I am referring to is the familiar distinction between fallibilism and infallibilism. Infallibilism is the claim that in order to have knowledge (justification) that p on the basis of one’s reasons those reasons must entail that p is true. Fallibilism is the denial of infallibilism. More precisely, fallibilism is the claim that one’s reasons in support of p do not have to entail that p is true in order for one to have knowledge (justification) that p.\textsuperscript{15} Skeptical arguments that conclude that we fail to have knowledge (justification) because we fail to meet infallibilist standards are instances of exotic skepticism, while skeptical arguments that make use of fallibilist standards are instances of domestic skepticism.

With these distinctions in hand, it is possible to precisely state the kind of skepticism that I will be considering in this chapter and in later chapters. My focus will be on strong\textsubscript{p}-full-local-domestic-fallibilist skepticism about the external world (hereafter unless otherwise noted I will refer to this as simply ‘skepticism’ or ‘external world skepticism’ and I will refer to those who put forward this kind of

\textsuperscript{15} See Cohen (1988) and Feldman and Conee (2004) for explanations of this distinction.
skeptical argument as ‘skeptics’ or ‘external world skeptics’). That is to say, I am concerned with the skeptical attack on our propositional justification for all external world propositions, propositions such as “I have hands”, “Grass is green”, “That is a chair”, etc. Further, the skeptical attack that I am focusing on does not appeal to an infallibilist conception of justification and it does not reject the legitimacy of our epistemic principles. At this point, there is a question that one might be tempted to ask: Why? That is, why focus on this particular strand of skepticism?

Although I think that a perfectly acceptable response to this sort of question is simply that the particular variety of skepticism that I am focusing on is a philosophically interesting kind of skepticism, I will present further reasons for seriously examining this particular kind of external world skepticism. I suspect that some of these reasons will be compelling for just about everyone while some will seem merely idiosyncratic. However, I think the reasons I give provide enough of a rationale to demonstrate that my project is worthwhile.

First of all, I focus on a local skepticism instead of global skepticism because at times I can find the arguments for the former troubling, but I do not have the same worries about arguments for the latter. Furthermore, I have never encountered an argument for global skepticism that is even remotely plausible.¹⁶ I consider full local

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¹⁶ John Greco (2000) notes that many philosophers have argued that global skeptical challenges are unintelligible. Earl Conee (2004b) argues that there are good reasons to think that global skepticism is intelligible (note, Conee does not argue that global skepticism is plausible or even defensible; he merely argues that it is not unintelligible). Although I agree with Conee that at least some arguments
skepticism because I do not think the skeptic’s argument has much of a chance if it is construed as partial local skepticism. I will not go into why this is the case here, but I will explicate this point more in chapter two.

Second, most concede that infallibilist views of empirical knowledge are implausible. Given that infallibilist views of knowledge are implausible, it is not surprising that an infallibilist conception of propositional justification is extremely implausible. This fact accounts for my focus on a strand of fallibilist skepticism.

Third, it would be much more disturbing to discover that domestic skepticism is true than it would be to discover that exotic skepticism is true. Domestic skeptical arguments conclude that we cannot even have the justification that we claim to have by our own standards. Just as it is more troubling to lose a game of chess to a small child when playing by the actual rules of chess than it is when playing by the child’s own personal rules; the conclusion that we fail to have justification for our external world beliefs by our own standards is more troubling than the conclusion that we fail by some other (purportedly correct) standards.

Finally, I focus on justification because skeptical arguments that challenge our justification make a stronger claim than those that challenge our knowledge. Along the same lines, skeptical arguments that challenge our propositional justification

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17 See Cohen (1988). Although fallibilism is the dominant view, there are notable exceptions such as Lewis (1996) and Williamson (2000).
make a much stronger claim than skeptical arguments that challenge our doxastic justification. Skeptical arguments against doxastic justification argue that we do not believe the things we do on the basis of good reasons, while skeptical arguments against propositional justification argue that we do not even possess reasons that are good enough to justify our beliefs. So, the attack on propositional justification offers the skeptic the most devastating result, if he is successful. If the skeptic can demonstrate that we lack propositional justification for our external world beliefs, it follows that any external world beliefs that we actually have are unjustified and that we lack knowledge of the external world. Further, by arguing against our having propositional justification for external world beliefs, the skeptic not only argues that all of the external world beliefs we have are unjustified, but he also argues that sensory experiences of the sort we have cannot justify external world beliefs.

18 Some might contest the claim that if the skeptic successfully shows that we lack justification he thereby shows we lack knowledge by arguing that knowledge does not require justification, see for example Lewis (1996). It is worth noting that Lewis holds a non-standard view of justification as having an argument in support of the proposition. Others, particularly some externalists, might deny that our lacking propositional justification would mean that we lack doxastic justification. Both Bergmann (2006) and Goldman (1986) might deny that propositional justification is necessary for doxastic justification. However, even if one can plausibly deny that propositional justification is necessary for doxastic justification in general, it is difficult to see how this denial can be at all plausible when applied to beliefs about the external world. Since our sensory experiences play a vital role in the justification of beliefs about the external world, if these beliefs are justified, it is not clear how one can reasonably claim that S has doxastic justification for a perceptual belief that p, but S’s sensory experiences do not propositionally justify that belief.
Now that I have clarified the particular version of external world skepticism that will be the focus of this chapter and successive chapters, I will turn to an examination of the skeptic’s arguments in support of this position.

1.3 Two Skeptical Arguments or Only One?

1.3.1 Closure and Underdetermination

The two most prevalent forms of argument for external world skepticism advanced in the past several years are what I will call Closure and Underdetermination. Each argument is so named because of the epistemic principle that is appealed to in the argument. There are various formulations of each of these arguments; however, the exact formulation that is considered is not very important so long as the formulations of the epistemic principles appealed to are at least approximately correct.\textsuperscript{19} Closure is often formulated in something like the following manner (where ‘p’ is a proposition about the external world and ‘Sk’ is a skeptical alternative such as “I am a brain-in-a-vat and ~p”):

\begin{enumerate}
  \item C1) If p is propositionally justified for me, then ~Sk is propositionally justified for me.
  \item C2) It is not the case that ~Sk is propositionally justified for me.
\end{enumerate}

\textsuperscript{19} See for example Brueckner (1994), Cohen (1998), Feldman and Conee (2004), and Pritchard (2005) for similar, yet slightly different formulations of these arguments.
C3) Therefore, p is not propositionally justified for me.\textsuperscript{20}

The epistemic principle that \textit{Closure} appeals to is roughly the following:

(CJ) For all S, φ, ψ, if S’s evidence propositionally justifies φ, and φ entails ψ, then S’s evidence propositionally justifies ψ.\textsuperscript{21, 22, 23}

\textit{Closure}’s appeal to CJ is apparent. CJ provides the support for C1.

\textit{Underdetermination} is often formulated in something like the following manner:

U1) If my evidence does not favor p over Sk, then my evidence does not propositionally justify p for me.\textsuperscript{24}

U2) My evidence does not favor p over Sk.

\textsuperscript{20} The formulation of this argument is adapted from Stewart Cohen’s (1998) formulation. The most noticeable difference between his formulation and mine is that I have replaced “I know p” in his formulation with “p is propositionally justified for me”.

\textsuperscript{21} This formulation is essentially Cohen’s (1998) slightly modified formulation of Brueckner’s (1994) formulation. I have modified Cohen’s formulation by replacing “justifies” with “propositionally justifies”. The phrase ‘propositionally justifies’ in this formulation should be understood as saying that S’s evidence on balance supports the proposition in question.

\textsuperscript{22} The recent literature on closure principles makes clear that there are many difficulties in trying to produce a problem-free formulation of a correct closure principle. However, these difficulties can be set aside because they will not be directly relevant to the current endeavor.

\textsuperscript{23} For this principle and the other epistemic principles throughout this chapter ‘S’s evidence’ should be understood to refer to S’s total evidence.

\textsuperscript{24} For one’s evidence to favor p over q is simply for one’s evidence to support p to a higher degree than it does q.
U3) My evidence does not propositionally justify p for me.

U4) Therefore, p is not propositionally justified for me.\textsuperscript{25}

The epistemic principle that \textit{Underdetermination} appeals to is roughly the following:

\textbf{(UP)} For all S, φ, ψ, if S’s evidence does not favor φ over some incompatible hypothesis ψ, then S’s evidence does not propositionally justify φ.\textsuperscript{26}

UP is needed to support U1 of \textit{Underdetermination}.

Although at first \textit{Closure} and \textit{Underdetermination} may seem like very different arguments for the same skeptical conclusion, the relationship between these two arguments is quite contentious. Some argue that first appearances are correct and that these arguments can independently motivate skepticism.\textsuperscript{27} Others argue that \textit{Closure} must appeal to some other skeptical argument in order to motivate C2.\textsuperscript{28}

\textsuperscript{25}Again, I follow Cohen (1998) in formulating this argument, but again I change the formulation so that it is in terms of propositional justification instead of simply justification and knowledge.

\textsuperscript{26}This formulation is essentially Cohen’s (1998) slightly modified formulation of Brueckner’s (1994) formulation. I have modified Cohen’s formulation by replacing “justify” with “propositionally justify”.

\textsuperscript{27}Cohen (1998) makes this claim; however, he argues that the two arguments are related. Huemer (2000) seems to think this as well because he claims that the skeptical problem raised by the brain-in-a-vat scenario is best understood as an issue of underdetermination, instead of an argument that appeals to closure. Vogel (1990b), (1993), (2004) and (2005) also seems to think of the two arguments as separate, though he claims that external world skepticism is an underdetermination problem.

\textsuperscript{28}Byrne (2004), Feldman and Conee (2004) and Greco (2000) and (2008) suggest that \textit{Closure} is dependent upon other skeptical arguments.
others argue that skeptical arguments must appeal to a closure principle such as CJ and appeal to any other epistemic principles is superfluous.\textsuperscript{29} Finally, there are those who argue that skeptical arguments must appeal to an underdetermination principle such as UP and any appeal to closure principles like CJ is superfluous.\textsuperscript{30} I think that the first group has the truth of the matter, \textit{Closure} and \textit{Underdetermination} are distinct arguments, however, there are some reasons to doubt this. Although \textit{Closure} and \textit{Underdetermination} are different arguments for skepticism, it is plausible that \textit{Closure} must make use of some other skeptical argument in order to support its premise C2. A plausible candidate for this other skeptical argument is \textit{Underdetermination}. I will proceed by examining Stewart Cohen’s (1998) argument and Duncan Pritchard’s (2005) argument against Anthony Brueckner’s (1994) argument to the effect that CJ and UP are equivalent. I will begin by looking at Cohen’s argument and the derivations that are needed for Brueckner’s argument to succeed.

Before turning to Cohen’s argument, it is important to briefly consider what is at stake with these equivalence arguments. Strictly speaking if CJ and UP are shown to be equivalent, this will not show that appeal to one principle makes appeal to the other superfluous. After all, if the two principles are equivalent, appealing to one cannot make appealing to other superfluous because in an important sense appealing

\textsuperscript{29} Dretske (1970) and Nozick (1981) both make this claim.

\textsuperscript{30} See Brueckner (1994) and Yalcin (1992) for arguments in support of this. See Cohen (1998) and Pritchard (2005) for criticisms of this claim.
to CJ just is appealing to UP, and vice versa. So, if Brueckner is correct that CJ and UP are equivalent, this will not show that either argument is without merit. However, what this would do is make the task of responding to the skeptic simpler in one respect—there would only be a single skeptical argument posed by *Closure* and *Underdetermination*, not two. On the other hand, if Brueckner is incorrect, and CJ and UP are not equivalent, there are two distinct arguments for skepticism presented by *Closure* and *Underdetermination*. One might think that this is good news for the skeptic given the difficulties with spelling out a correct formulation of closure and the purported counterexamples to closure, counterexamples which do not seem to have even the potential to have any effect on principles like UP. By having a skeptical argument that does not rely upon closure, the skeptic can avoid possible refutations that consist of raising problems for closure.\(^{31}\) That is, if these two principles are distinct, skeptics can employ a powerful argument for skepticism, *Underdetermination*, without making any appeal to potentially problematic closure principles. Thus, determining whether CJ and UP are equivalent is an important step toward understanding the skeptic’s argument.

\(^{31}\) See Dretske (1970), (2005a), (2005b) and Nozick (1981) for considerations against closure principles. It should be noted that both Dretske and Nozick take their arguments against closure to establish refutations of skepticism. See Feldman (1995), Vogel (1990a), and Hawthorne (2005) for considerations in support of closure principles. See David and Warfield (2008) for difficulties in formulating closure principles that are both acceptable and function as the skeptic requires.
1.3.2 Cohen’s Argument

The first step in Brueckner’s argument that CJ and UP are equivalent is to note some helpful equivalences. CJ is equivalent to:

(CJ’) For all S, φ, ψ, if S’s evidence propositionally justifies φ, and φ and ψ are incompatible, then S’s evidence propositionally justifies not-ψ.  

UP is equivalent to:

(UP’) For all S, φ, ψ, if S’s evidence propositionally justifies φ, and φ and ψ are incompatible, then S’s evidence favors φ over ψ.

After observing that CJ is equivalent to CJ’ and UP is equivalent to UP’ Brueckner attempts to show that CJ’ and UP’ are equivalent by assuming the first principle and the second principle’s antecedent then deriving the second principle’s consequent. Although Cohen agrees with Brueckner that CJ’ entails UP’, and hence that CJ entails UP, he argues that UP’ does not entail CJ’. Thus, he maintains that CJ and UP are not equivalent.

In order to understand Cohen’s argument it will be instructive to examine both of the proposed derivations. Here is the derivation of UP’ from CJ’, which Cohen claims is unproblematic:

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32 This formulation is essentially Brueckner’s (1994). Throughout my discussion of these issues, I will replace instances of “justifies” in Brueckner’s and Cohen’s formulations with “propositionally justifies”.

33 Brueckner (1994)
(1) If S’s evidence propositionally justifies \( \varphi \), and \( \varphi \) and \( \psi \) are incompatible, then S’s evidence propositionally justifies not-\( \psi \). [(CJ')] 

(2) S’s evidence propositionally justifies \( \varphi \), and \( \varphi \) and \( \psi \) are incompatible. [Antecedent of (UP')] 

(3) S’s evidence propositionally justifies not-\( \psi \). [From 1, 2] 

(4) S’s evidence propositionally justifies \( \varphi \) and S’s evidence propositionally justifies not-\( \psi \) [From 2, 3] 

(5) S’s evidence favors \( \varphi \) over \( \psi \). [From 4] 

So, Cohen agrees with Brueckner that if you assume CJ' and the antecedent of UP' it is possible to derive the consequent of UP'. Thus, he admits that CJ' entails UP'. 

Now, Brueckner and Cohen disagree about the possibility of deriving CJ' from UP'. In order to illustrate Cohen’s objection, it is helpful to begin by looking at how the derivation should proceed, if Brueckner is correct: 

(1') If S’s evidence propositionally justifies \( \varphi \), and \( \varphi \) and \( \psi \) are incompatible, then S’s evidence favors \( \varphi \) over \( \psi \). [(UP')] 

(2') S’s evidence propositionally justifies \( \varphi \), and \( \varphi \) and \( \psi \) are incompatible. [Antecedent of (CJ')] 

(3') S’s evidence favors \( \varphi \) over \( \psi \). [From 1', 2'] 

(4') S’s evidence propositionally justifies \( \varphi \) and S’s evidence favors \( \varphi \) over \( \psi \). [From 2', 3'] 

(5') S’s evidence propositionally justifies not-\( \psi \). [From 4']

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34 Cohen (1998)
Cohen objects to the move from 4’ to 5’. He claims that the only way one can get from 4’ to 5’ is by assuming the truth of CJ’. Cohen maintains that since 3’ follows from the antecedent of CJ’, 3’ does no work in deriving 5’. In other words, Cohen argues that Brueckner needs for 5’ to follow directly from 2’ (the antecedent of CJ’), however, he claims that the only way to get from 2’ to 5’ is by assuming the truth of CJ’, which would mean the derivation of CJ’ from UP’ fails. Cohen claims that (6’) “S’s evidence does not justify ψ” is what follows from 2’. The move from 2’ to 6’ is licensed by acceptance of a principle of which Cohen claims “it is hard to see how one could fail to accept”35:

\[(\text{INC}) \text{ For all } S, \varphi, \psi, \text{ if S’s evidence propositionally justifies } \varphi, \text{ and } \varphi \text{ entails not-}\psi, \text{ then S’s evidence does not propositionally justify } \psi.\]  

Given INC, 6’ clearly follows from 2’. However, Cohen rightly notes that 6’ does not entail the conclusion that Brueckner needs, namely 5’.

Although Cohen may be correct in claiming that CJ and UP are not equivalent, his argument against their equivalence will not work when the argument is construed in terms of propositional justification. Given Cohen’s commitment to INC, it is relatively easy to see the mistake in Cohen’s objection if we accept a plausible view about the nature of the relation between evidence and propositional justification.

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35 Cohen (1998) pg. 158 footnote 30. Below I will argue that there are good reasons to not accept INC, and that it is not very hard to see why one might fail to accept it.

36 Ibid. pg. 158 I have modified this principle slightly by replacing “justifies” and “justify” with “propositionally justifies” and “propositionally justify”, respectively.
justification. It is plausible to think of the relationship between evidence and propositional justification in the following manner: if S’s evidence is balanced between p and ~p, then neither p nor ~p is propositionally justified for S; if S’s evidence on balance supports p, then p is propositionally justified for S; and if S’s evidence on balance supports ~p, then ~p is propositionally justified for S.  

In terms of probability this view of the relationship between evidence and propositional justification makes the following claims: if Pr (p/E) = .5, then the evidence does not propositionally justify p nor does it propositionally justify ~p for S; if Pr (p/E) > .5, then S’s evidence propositionally justifies p; and if Pr (p/E) < .5, then S’s evidence propositionally justifies ~p. Given this reasonable assumption about the relation of evidence to propositional justification and INC, it is clear that Cohen’s objection fails. To illustrate this, consider 2’, which states “S’s evidence propositionally justifies φ, and φ and ψ are incompatible”. Given 2’ and the assumption just mentioned, Pr (φ /E) > .5. The fact that the Pr (φ /E) > .5 means that the Pr (not-φ /E) < .5. Since, according to 2’, φ and ψ are incompatible, φ entails not-ψ. According to INC, since S’s evidence propositionally justifies φ and φ entails not-ψ, S’s evidence does not propositionally justify ψ. So, by INC and 2’ Pr (ψ /E) ≤ .5. So far this is not enough to derive 5’ from 2’. However, since φ and ψ are incompatible, ψ entails not-φ. If ψ entails not-φ, then Pr (ψ /E) ≤ Pr (not-φ /E). As noted above, from 2’ it follows that Pr (not-φ /E) < .5. Since Pr (ψ /E) ≤ Pr (not-φ /E) and Pr (not-φ /E) < .5, Pr (ψ /E) <

Feldman (2004a) expresses sympathy for this conception of the relationship between evidence and propositional justification.
So, given INC and 2’, \( \Pr(\psi / E) < .5 \). Consequently, \( \Pr(\text{not-}\psi / E) > .5 \).

Therefore, given INC and the plausible assumption about the relationship between propositional justification and evidence described above, 5’, “S’s evidence propositionally justifies not-\(\psi\)”, does follow from 2’. Hence, Cohen’s claim that the move from 4’ to 5’ is problematic is false given INC and the above assumption about propositional justification and evidence. Thus, Cohen fails to show that UP’ does not entail CJ’.

Before moving on it should be noted that when Cohen makes his argument he is focusing on knowledge level justification, not propositional justification. That is, he construes CJ and UP as well as CJ’ and UP’ in terms of knowledge level justification. This is important because many would deny the assumption about the relationship between evidence and justification described above, if it were understood as an assumption about the relation between evidence and knowledge level justification instead of between evidence and propositional justification. Without this assumption about the relation between evidence and justification, the argument given in the previous paragraph fails to show that UP’ entails CJ’. So, it is reasonable to think that Cohen’s argument succeeds in showing that CJ and UP are not equivalent when they are construed as principles of knowledge level justification. That being said, the focus here is on propositional justification. When the principles are understood in terms of propositional justification, the argument in the preceding paragraph does demonstrate that UP’ entails CJ’. That is to say, Cohen’s argument fails with respect to CJ and UP understood as principles of propositional justification.
In light of the preceding, it is safe to conclude either that CJ and UP really are equivalent principles of propositional justification or that at least one of the two assumptions, INC or the assumption described about the relationship between evidence and propositional justification, is false. As explained above, the assumption about the relationship between S’s evidence and what is propositionally justified for S is exceedingly plausible. So, given the above argument, one must conclude that either CJ and UP are equivalent or INC is false. I think that the proper conclusion is that INC is false because there are examples that seem to demonstrate that very fact. First, consider a case where S is told by a mathematician, whom she knows to be an expert, highly reliable, very trustworthy, etc., that some mathematical formula, $\varphi$, is true and S is told by another mathematician, whom she also knows to be an expert, highly reliable, very trustworthy, etc., that the mathematical formula, $\psi$, is true. S seems to have strong propositional justification from expert testimony in support of each of these propositions. Suppose that in this case unbeknownst to S, $\varphi$ and $\psi$ are inconsistent, that is to say, $\varphi$ entails not-$\psi$ and $\psi$ entails not-$\varphi$. It still seems that $\varphi$ is propositionally justified for S and $\psi$ is propositionally justified for S, even though they are inconsistent. After all, S has really good reasons to believe $\varphi$ and really good reasons to believe $\psi$ and she has no reason to think that there is something wrong with believing both of them. Thus, it seems that INC is false.\(^{38}\) Therefore, it seems

\(^{38}\)Cases of this sort against INC are easily multiplied. All that one needs to generate this sort of case is for S to have good independent reasons for believing two inconsistent propositions and for S to be unaware of the inconsistency of the propositions.
reasonable to think that CJ and UP are not equivalent. However, it should be noted that Cohen’s argument does not demonstrate this when the principles are understood as principles of propositional justification. Rather, at best Cohen’s argument shows that it is not clear that CJ and UP are equivalent.

Consideration of the problematic nature of INC brings to light a problem in both Brueckner’s and Cohen’s formulations of CJ and UP. Both the formulation of CJ and the formulation of UP that they each propose seem false. CJ states “For all S, φ, ψ, if S’s evidence propositionally justifies φ, and φ entails ψ, then S’s evidence propositionally justifies ψ”. However, it is possible for S to satisfy the antecedent of CJ without having any awareness of the entailment relation that holds between φ and ψ. If S has no idea that φ entails ψ, then it does not seem that S’s evidence propositionally justifies ψ for her even if her evidence propositionally justifies φ.

Similar considerations apply to UP, which claims “For all S, φ, ψ, if S’s evidence does not favor φ over some incompatible hypothesis ψ, then S’s evidence does not propositionally justify φ”. As noted above when discussing INC, S might have extremely good evidence for two propositions and be totally unaware that those propositions are incompatible. It seems that in that sort of situation UP fails to hold. So, it seems that CJ and UP both need to be strengthened in order to be plausible.

Duncan Pritchard (2005) proposes plausible strengthened formulations of both CJ and UP, which I will refer to as ‘CJ*’ and ‘UP*’ respectively, when he makes his argument against Brueckner’s attempt to show that CJ and UP are equivalent. Here are Pritchard’s formulations:
(CJ*) For all \( S, p, q \), if \( S \) is propositionally justified in believing \( p \), and \( S \) knows that \( p \) entails \( q \), then \( S \) is propositionally justified in believing \( q \).\(^{39}\)

(UP*) For all \( S, p, q \), if \( S \)’s evidence for believing \( p \) does not favour \( p \) over some hypothesis \( q \) which \( S \) knows to be incompatible with \( p \), then \( S \)’s evidence does not propositionally justify \( p \) for \( S \).\(^{40,41}\)

Though there may still be problems with these two formulations, especially CJ*, I will assume that these are the correct formulations of these principles as I turn to examining Pritchard’s argument that the two are not equivalent.\(^{42}\)

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\(^{39}\) Pritchard (2005) pg. 41 I have slightly modified this formulation. I have replaced “justified” in the original formulation with “propositionally justified”.

\(^{40}\) Ibid. pg. 39 I have slightly modified this formulation. Where this formulation says “propositionally justify \( p \) for \( S \)” the original formulation says “justify \( S \) in believing \( p \)”.

\(^{41}\) It is worth noting that these principles do not support the premises in the above formulations of Closure and Underdetermination. The reason for this is that both CJ* and UP* require \( S \) to know that the two propositions are inconsistent, but the relevant premises in Closure and Underdetermination (C1 and U1) do not. This is not a major concern because both arguments can be reformulated so that CJ* and UP* do support the relevant premises. In fact in the next chapter I will provide such a reformulation of Underdetermination. Having noted the disconnect between CJ* and UP* and Closure and Underdetermination, respectively, I will set this issue aside for the remainder of this chapter because nothing that follows hangs on it.

\(^{42}\) See David and Warfield (2008) for a discussion of the difficulty of properly formulating closure principles.
1.3.3 Pritchard’s Argument

Duncan Pritchard (2005) also argues that Brueckner is mistaken, that is, he also argues that CJ* and UP* are not equivalent. Pritchard, like Cohen, allows that CJ* entails UP* while arguing that UP* does not entail CJ*. Pritchard considers whether CJ* and UP* are equivalent by examining a simplified instance of each principle (where ‘e’ refers to an “everyday proposition” and ‘BIV’ refers to the brain-in-a-vat skeptical hypothesis, which is inconsistent with e):

\[
\begin{align*}
(A) & \text{ If } S \text{ is justified in believing } e, \text{ then } S \text{ is justified in believing } \neg (\text{BIV}). \\
(B) & \text{ If } S \text{ is justified in believing } e, \text{ then } S’\text{’s evidence favours } e \text{ over } (\text{BIV}).
\end{align*}
\]

First, since Pritchard agrees that CJ* entails UP*, he claims that (A) entails (B). Here is the argument:

1a) \( S \) is justified in believing \( e \). [Antecedent of (B)]

2a) \( S \) is justified in believing \( \neg (\text{BIV}) \). [From 1a and (A)]

3a) \( S \) is not justified in believing (BIV). [From 2a]

3a’) \( S \) is justified in believing \( e \) and \( S \) is not justified in believing (BIV) [From 1a and 3a]

4a) \( S’\text{’s evidence favours } e \text{ over } (\text{BIV}). \) [From 3a’]\\n
43 Although CJ* and UP* are not exactly the same formulations that Brueckner uses in his argument, it is doubtful that he would object to Pritchard’s use of them in responding to his argument given the difficulties for CJ and UP discussed above.

44 Pritchard (2005) pg. 41–42 (A) is an instance of CJ* and (B) is an instance of UP*.
When Pritchard considers whether (B) entails (A) he makes use of the following variation of (B) in addition to using (B):

\[(B^*) \text{ If } S \text{ is justified in believing (BIV), then } S\text{'s evidence favours (BIV) over } e.\] \(^{46}\)

According to Pritchard, (B) does not entail (A). In order to see why he thinks this is the case, it will be useful to consider what Pritchard claims can be derived from (B), a weaker conclusion than what is necessary to show that (B) entails (A).

1b) \(S\) is justified in believing \(e\). [Antecedent of (A)]

2b) \(S\)’s evidence favours \(e\) over (BIV). [From 1b and (B)]

3b) \(S\)’s evidence does not favour (BIV) over \(e\). [From 2b]

4b) \(S\) is not justified in believing (BIV) [From 3b and (B\*)] \(^{47}\)

At this point Pritchard concludes that (B) does not entail (A) because the conclusion of (4b) is much weaker than the consequent of (A).

While Pritchard is surely correct that “\(S\) is not justified in believing (BIV)” is a much weaker claim than that “\(S\) is justified in believing \(\sim\) (BIV)”, the conclusion that he draws from this fact is unwarranted. Granted, there does not seem to be anything amiss with Pritchard’s derivation of the former claim from (B) and the antecedent of (A), but the fact that the weaker claim of (4b) can be deduced from (B)

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\(^{45}\) Pritchard (2005) pg. 42 I have added the premise 3a’ to make the final steps in the argument more explicit.

\(^{46}\) Ibid. pg. 43

\(^{47}\) Ibid. pg. 43
and the antecedent of (A) does not demonstrate that the stronger claim of (A)’s consequent cannot. In fact the consequent of (A) can be deduced from (B) and the antecedent of (A), if we grant the assumption about the relationship between evidence and propositional justification that I described in the previous section and two basic tenets of probability theory:

1) \( \Pr (p) = 1 - \Pr (\neg p) \)

2) When \( p \) entails \( q \): \( \Pr (p) \leq \Pr (q) \)

Here is an argument utilizing these three assumptions for the conclusion that the consequent of (A) follows from (B) and the antecedent of (A):

1c) \( S \) is justified in believing \( e \). [Antecedent of (A)]

2c) If \( S \) is justified in believing \( e \), then \( S \)’s evidence favors \( e \) over (BIV). [(B)]

3c) \( S \)’s evidence favors \( e \) over (BIV). [From 1c and 2c]

4c) \( S \) is justified in believing \( e \) and \( S \)’s evidence favors \( e \) over (BIV). [From 1c and 3c]

5c) \( S \) is justified in believing \( \neg (\text{BIV}) \) [From 4c]

The contentious move in this argument is the move from (4c) to (5c). However, if we grant the above theorems of the probability calculus and the assumption about the relation of evidence to propositional justification, this move is perfectly acceptable.

Assuming that (4c) is true and that \( S \) knows that \( e \) and BIV are inconsistent, which Pritchard should accept since B is supposed to be an instance of UP* and UP* concerns a proposition that “\( S \) knows to be incompatible with \( p \)”, the following is true (where ‘\( E \)’ = \( S \)’s evidence): \( \Pr (e/E) > .5 \) and \( \Pr (\neg e/E) < .5 \). Since \( e \) and BIV are
inconsistent, BIV entails not-e. So, Pr ((BIV)/E) ≤ Pr (not-e/E). Thus, Pr ((BIV)/E) < .5, which means the Pr (~ (BIV)/E) > .5. Therefore, S is justified in believing ~(BIV).

Given that (B) entails (A) and (A) entails (B), (A) and (B) are, contrary to what Pritchard claims, equivalent. Therefore, given the assumptions that S knows that e and BIV are inconsistent, that propositional justification is related to one’s evidence in the way described above, and the two basic theorems of the probability calculus, CJ* and UP* are equivalent because (A) is an instance of CJ* and (B) is an instance of UP*.

Before concluding that CJ* and UP* are in fact equivalent, it is important to first consider how plausible the necessary assumptions are. The first assumption, that S knows that e and BIV are inconsistent, should be granted. Since Pritchard claims that (B) is an instance of UP* and in UP* it is assumed that S knows that the two propositions under consideration are incompatible, the fact that S knows that e and BIV are inconsistent does not seem to be open to debate. The assumptions about the probability calculus are extremely plausible. Even if one worries about the application of probability to discussions of justification, it is not clear how one could plausibly deny these two theorems. Insofar as we give equal weight to the epistemic goals of having true beliefs and not having false beliefs the final assumption, which concerns the relationship between one’s evidence and her propositional justification, is plausible.48 After all, to not believe p when Pr (p/E) > .5 seems to privilege the goal of avoiding false beliefs over the goal of having true beliefs.

48 See James (1911) and Goldman (2002) for discussion of these epistemic goals.
Although this assumption seems plausible, one might think that we should privilege one of these epistemic goals over the other or that other epistemic goals bear on what we should think is required for justification. So, one might think that this assumption is false because only requiring that $\Pr(p/E) > 0.5$ in order for $E$ to propositionally justify $p$ sets the standard for justification too low. One might think that significantly stronger support for $p$ is needed before $p$ is propositionally justified. Although I doubt that there is good reason to privilege one of these epistemic goals over the other, I will not argue for that here. Instead, I will merely note that one might have reasons for thinking that the assumption about the relationship between one’s evidence and her propositional justification that I described above is false. Hence, there are reasons that one might have for thinking that $CJ^*$ and $UP^*$ are not equivalent. Thus, whether or not Closure and Underdetermination offer the skeptic two independent arguments in support of skepticism or only one seems to depend on the appropriate weighting of our epistemic goals.

1.4 Concluding and Looking Forward

In this chapter, I have done two things. First, I have distinguished various kinds of skepticism and explained that I will be concerned with a particular form of external world skepticism throughout this research project. Second, I have examined the relationship between two common sceptical arguments, Closure and Underdetermination. I have argued that whether or not these really are two arguments or only one depends on whether $CJ^*$ and $UP^*$ are equivalent. I have
shown that the equivalence of CJ* and UP* depends on the truth of an assumption about the relationship between one’s evidence and her propositional justification, which in turn depends upon how much weight we should give to particular epistemic goals.

If we should treat the goals of having true beliefs and avoiding false beliefs as equally important, CJ* and UP* are equivalent. If these two principles are equivalent, Closure and Underdetermination are really the same argument. Thus, focusing on Underdetermination is in no way remiss because it is focusing on the most prominent skeptical argument.

If we should privilege avoiding false beliefs over having true beliefs, then CJ* and UP* are not equivalent. If these two principles are distinct, then Closure and Underdetermination are two independent arguments for skepticism. Since these arguments are independent, underdetermination principles play a key role in at least one important kind of skeptical argument. Additionally, one might think that if Closure and Underdetermination are distinct, Underdetermination allows the skeptic to make a stronger case because underdetermination principles are relatively uncontroversial while controversy surrounds the legitimacy of closure principles. Further, it is reasonable to think that Closure must appeal to another skeptical argument to support a key premise “It is not the case that ~Sk is propositionally

49 This is something that both Cohen (1998) and Pritchard (2005) seem to accept.
justified for me”.50 A plausible candidate for the other skeptical argument that Closure needs to appeal to is Underdetermination.

Whether or not one agrees with what I have said concerning the equivalence of Closure and Underdetermination, the appeal to an underdetermination principle is an important play in the skeptic’s playbook.

In the next chapter, I will consider some of the difficulties facing the skeptic in motivating the premises of Underdetermination. By exploring these difficulties, I intend to illuminate the strategy the skeptic needs to employ in order to attempt to win our skeptical game. Of course, my primary goal is defeating the skeptic and winning the game. With that in mind, the next chapter will be profitable because by understanding the skeptic’s strategy the odds of developing a decisive counter are greatly increased.

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50 Byrne (2004), Feldman and Conee (2004), as well as Greco (2000) and (2008) suggest that Closure is dependent upon other skeptical arguments for this reason.
Chapter 2: Preliminary Objections and Constraints on Underdetermination

2.1 Introduction

In the previous chapter I argued that it is plausible to think that the two most common skeptical arguments both appeal to underdetermination principles at least to some extent. Thus, I concluded that Underdetermination, the argument which concludes that we lack justification for our external world beliefs because our evidence underdetermines between these beliefs and skeptical alternatives, is an important argument for external world skepticism. In this chapter I will explore various preliminary objections to Underdetermination and the constraints that some of these objections place on how the skeptic can attempt to successfully employ this argument. My goal in this chapter is not to show that Underdetermination is unsound or that the skeptic cannot employ it in his attack on the justification of our external world beliefs; instead I intend to demonstrate that several objections that may initially seem plausible are not sufficient to defeat the skeptic’s argument. Though none of these objections are decisive, many are helpful in that they illuminate restrictions on the plausible moves the skeptic can make when attempting to provide the needed support for this argument. So, these objections help to show that the skeptic’s task of arguing against our having justification for our external world beliefs is not as easily performed as one might think. Further, consideration of these objections and the constraints that they impose helps to clarify the skeptic’s argument.
Often it is assumed that the skeptic’s job is easy—simply raise doubts about our having justification for various beliefs. At times this is all that the skeptic needs to do, but at other times he must do more. If the skeptic’s goal is merely to cause us to have doubts about our justification or if he seeks to bring to the fore the inconsistent intuitions that we sometimes have about our justification for some of our beliefs and various skeptical alternatives, then all the skeptic needs to do is tell us some stories.\textsuperscript{51} He simply needs to tell us one of the classic stories: we might be deceived by Descartes’ Demon, or we really could be brains-in-vats, or we might be in the \textit{Matrix}, and so on. However, if the skeptic is actually presenting us with an argument in the hopes of accomplishing the goal of showing that we lack the justification that we think we have, his task is not so simple. Describing a compelling skeptical alternative to our commonsense view of the world may play a role in the skeptic’s task, but it cannot be the whole story. When the skeptic presents an argument he does not get a free pass, he must do as anyone else and provide motivation for the premises of his argument. Sometimes this is not an easy thing to do.

In what follows I begin by closely examining \textit{Underdetermination} and describing a challenge that some have put forward for the underdetermination principle that is at work in the argument. After considering and responding to this

\textsuperscript{51} Cohen (1988) and (1999) claims that the nature of the problem of skepticism is that it demonstrates to us that we have a set of inconsistent intuitions and that responding to skepticism involves making sense of those inconsistent intuitions.
challenge, I explain the most common (and most intuitively plausible) sub-argument for one of the key premises of *Underdetermination*, the premise that our evidence does not favor our commonsense beliefs about the external world (CS) over some skeptical alternative (SA). Inclusion of this sub-argument in *Underdetermination* yields a more detailed version of the skeptic’s argument. After explicating this more detailed skeptical argument, I explore some of the difficulties facing the skeptic in supporting various premises of this argument. These difficulties, though not amounting to either a clear refutation of *Underdetermination* or the enhanced version containing the sub-argument mentioned above, are relevant because they place constraints on the skeptic’s construction of various SAs. They make it clear that the skeptic has real work to do when he attacks our justification for external world beliefs.

### 2.2 *Underdetermination*

As noted above, the focus of this chapter is *Underdetermination*. Here is a formulation of *Underdetermination* that is the same as Cohen’s (1998) formulation, which was presented in the previous chapter, in all relevant respects (here ‘CS’ represents our set of commonsense external world beliefs and ‘SA’ represents some skeptical alternative to CS).

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52 This formulation is slightly different than the formulation in the previous chapter. This formulation substitutes “CS” for “p” and “SA” for “SK”.

53
Underdetermination

U1) If S’s evidence does not favor CS over SA, then S’s evidence does not propositionally justify CS for S. 54
U2) S’s evidence does not favor CS over SA.
U3) S’s evidence does not propositionally justify CS for S.
U4) Therefore, CS is not propositionally justified for S. 55, 56

53 The set of beliefs that constitute CS will vary from person to person. For example, the set of CS beliefs that I presently have contains beliefs such as “I am looking at a computer screen”, “Yesterday I went to the pub with some of my colleagues”, and “My sister is shorter than I am”, but another’s set of CS beliefs will not contain these beliefs. Although the exact beliefs that go into CS will vary from person to person, there will be several beliefs that are held in common. For instance, many individuals’ sets of CS beliefs will include the following: “The sun is bigger than the earth”, “Infants sometimes cry”, and “There is food at the grocery store”. More importantly, the beliefs that constitute CS have two important features. First, their truth entails a mind-independent external world. Second, if they are justified at all, they are justified empirically.

54 For one’s evidence to favor p over q is simply for one’s evidence to support p to a higher degree than it does q.

55 I am following Cohen (1998) in formulating this argument, but I change the formulation so that it is in terms of propositional justification instead of simply justification and knowledge. Additionally, I replace his use of the personal pronouns “my” and “me” with “S’s” and “S”, respectively.

56 Since CS is a set of beliefs, it is not the sort of thing that can be justified or unjustified. Rather, the beliefs that constitute CS can be justified or unjustified. So, it is more accurate to say that the conclusion of Underdetermination is that the beliefs constituting CS are not propositionally justified for S, however, for short I will say that “CS is not propositionally justified for S”.

Though *Underdetermination* is often presented in this manner, as we saw in the previous chapter, this formulation is problematic. The problem is that U1 is an instance of an implausible general principle:

\[(\text{UP}) \text{ For all } S, p, q, \text{ if } S\text{'s evidence does not favor } p \text{ over some incompatible hypothesis } q, \text{ then } S\text{'s evidence does not propositionally justify } p.\]  

The problem with UP is that S might have very strong evidence for two incompatible hypotheses without being aware that the hypotheses are incompatible. Recall from chapter one, there can be situations in which S has strong propositional justification from expert testimony in support of p and strong propositional justification from expert testimony in support of q. If, unbeknownst to S, p and q are inconsistent, it seems that p is propositionally justified for S and q is propositionally justified for S. After all, in this sort of case S has really good reasons to believe p and really good reasons to believe q and she has no reason to think that there is something wrong with believing both of them. Thus, UP is unacceptable, and so is U1.

A more plausible underdetermination principle for the skeptic’s argument is:

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57 Both Brueckner (1994) and Cohen (1998) present *Underdetermination* in essentially this way. Importantly, the way they both present the argument contains the exact problem that I will describe.

58 This formulation is essentially Cohen’s (1998) slightly modified formulation of Brueckner’s (1994) formulation. I have modified Cohen’s formulation by replacing “justify” with “propositionally justify”. Additionally, I have replaced “φ” and “ψ” in the original formulation with “p” and “q”, respectively.
(UP*) For all $S$, $p$, $q$, if $S$’s evidence for believing $p$ does not favour $p$ over some hypothesis $q$ which $S$ knows to be incompatible with $p$, then $S$’s evidence does not propositionally justify $p$ for $S$.\textsuperscript{59,60}

Given that UP* is not susceptible to the above objection to UP, the skeptic’s argument is more plausible if it appeals to UP* instead of UP. Thus, instead of employing Underdetermination the skeptic is better served by using the following:

\textit{Underdetermination*}

U1*) If $S$’s evidence does not favor CS over SA (and $S$ knows CS and SA are incompatible), then $S$’s evidence does not propositionally justify CS for $S$.

U2*) $S$’s evidence does not favor CS over SA (and $S$ knows CS and SA are incompatible).

U3*) $S$’s evidence does not propositionally justify CS for $S$.

\textsuperscript{59} Pritchard (2005) pg. 39 I have slightly modified Pritchard’s formulation. Where this formulation says “propotionally justify $p$ for $S$” the original formulation says “justify $S$ in believing $p$”.

\textsuperscript{60} Admittedly, there might be additional worries concerning UP*. For example, one might worry that the requirement that $S$ knows that $p$ and $q$ are incompatible is too strong. One reason to worry about this is that it will likely render skeptical arguments ineffective against ordinary believers because they will lack the requisite knowledge. Though this is a legitimate worry, I will set it aside here because it will not affect what follows. Further, in later chapters when I propose a response to the skeptic’s argument I will grant that this knowledge is had by the subject in question.
Therefore, CS is not propositionally justified for S.\textsuperscript{61}

One thing to note about Underdetermination* is that it only has two premises, U1* and U2*. U3* is a sub-conclusion, which follows directly from U1* and U2*. The conclusion, U4*, follows directly from U3* and the exceedingly plausible assumption that if one’s evidence does not propositionally justify p, then p is not propositionally justified for her. Since this assumption about evidence is very intuitive, there does not seem to be anything to contest with U3* and U4*. So, all of the interesting work in this argument is being done by U1* and U2*. Let us take a closer look at these two premises.

U1* is often accepted as true by both skeptics and anti-skeptics because it is an instance of the general principle UP*. The principle UP* seems plausible, especially when we understand “evidence” to mean one’s total evidence. It is reasonable to think that S’s total evidence cannot support two hypotheses, which S knows to be incompatible, equally well; and yet S be propositionally justified in believing one of them.\textsuperscript{62} So, it seems reasonable to think that UP* is true.

\textsuperscript{61} Though the parenthetical phrases in U1* and U2* are important, for simplicity of prose I will drop the parenthetical phrases throughout the remainder of the chapter. However, it is assumed throughout this discussion that S knows that CS and SA are incompatible.

\textsuperscript{62} Of course, there may be situations where S’s total evidence supports two incompatible hypotheses equally well, but she is rational in choosing one because the utility of choosing arbitrarily is higher than the utility of no choice at all. However, the rationality here is not epistemic, it is pragmatic. So, even in this sort of situation S’s evidence does not propositionally justify one of the hypotheses.
Although UP* is intuitively plausible, recently its truth has been called into question. Allan Hazlett (2006) argues that with respect to certain “hinge propositions” such as “there is an external world” and “I am not the victim of some massive deception” UP* (and similar principles) is false.\(^63\) Hazlett concludes that UP* is false because it is inconsistent with the following principle, which Hazlett argues is true:

\[(\text{Security}) \quad \text{S’s justified hinge belief that } p \text{ is defeated only if } S \text{ has sufficient reason to believe } \sim p.\] \(^64\)

Hazlett offers two arguments in support of Security. The first argument is Hazlett’s “argument from norms”. The argument from norms begins with (+):

Justified belief in the external world is defeated only by sufficient reason to believe that there is not an external world.\(^65\)

Since Hazlett claims that belief in the external world is a hinge proposition, (+) is an instance of Security. Hazlett maintains that (+) summarizes a norm that “we actually believe in accordance with.”\(^66\) According to Hazlett, since (+) is an epistemic norm that we have and we do not have sufficient reason to believe that there is not an external world, “our norms demand that we believe that there is an external world

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63 Pg. 200 See also Crispin Wright (2004a) and (2004b) for similar thoughts concerning hinge propositions and their justification.

64 Ibid. pg. 200

65 Ibid. pg. 202

66 Ibid. pg. 203
(even if it is clear to us that our subjective state is “neutral” as between that hypothesis and others inconsistent with it).”\(^{67}\) Thus, Hazlett concludes that we are justified in believing that there is an external world even if our evidence in favor of it does not favor it over hypotheses which we know are inconsistent with it. Hazlett maintains that **Security** has been defended because (+) has been defended.\(^{68, 69}\)

Although, if sound, the argument from norms would spell serious trouble for the skeptic’s argument, it is not clear that the argument from norms is sound. First, one might question whether we really follow the (+) norm at all. If we do not believe in accordance with (+), then Hazlett’s argument is unsound. It seems just as plausible that instead of believing in accordance with (+) we believe according to the norm “justified belief in the external world can never be defeated” or the norm “justified belief in a proposition that is psychologically difficult to fail to believe is never defeated”, and so on. However, whether we believe according to the supposed norm,

\(^{67}\) Ibid. pg. 202

\(^{68}\) Hazlett seems to be assuming that if the argument from norms is a sound argument in support of (+), similar arguments from norms will support the other hinge propositions. It is not clear to me that this assumption is true (primarily because I do not know the full extent of the class of propositions that are hinge propositions), however, I do not think that much will turn on this because it is not clear that the argument from norms works in the case of (+).

\(^{69}\) Of course, if Hazlett is correct his argument not only shows that UP* is false, and so that U1* is false; it shows that our belief in an external world is justified. Thus, if Hazlett is correct the skeptic’s attack on our justification for external world beliefs fails.
(+) or one of these other norms seems to be a matter of speculation, so I will set it aside here.

Second, even if we grant that we do form beliefs in a way that fits with (+), one might plausibly question why we should think the fact that we do form beliefs this way entails that (+) is a norm that we should have. This is a response that Hazlett anticipates, but his reply that “The argument from norms, as I’m taking it, is silent on this question. This is a norm that actually governs our beliefs, and if I am right about that, our ordinary belief in the external world is justified” is far from convincing. It is not apparent how the fact that we do believe in accordance with a particular norm entails that it is a reasonable norm for us to have or that the beliefs that we form in accordance with the norm are justified. If we found a group of people on an isolated island who formed beliefs in accord with the (-) norm, which says that the justified belief that we are massively deceived by our sensory experiences is defeated only by sufficient reason to believe that we are not so deceived, we would not say that their belief that they are massively deceived by their sensory experience is thereby justified. The problem with the islanders’ belief seems to be that they believe something for which they lack sufficient evidence. Since they lack evidence for their belief that they are massively deceived, we correctly judge that their belief is not justified. We so judge their belief regardless of what norm(s) they happen to be following. Likewise, if our belief in the external world is not based on sufficient evidence, it seems that the belief is not justified. This is the case even if by believing

70 Hazlett (2006) pg. 203
in an external world we believe in accord with (+). So, the argument from norms does not seem to be a promising defense of (+) or by extension Security.

Hazlett’s second argument in support of Security is what he calls the “argument from confusion”. Hazlett explains:

we have an epistemic goal: to know a great many things. To pursue this goal, we need to form a great many beliefs. If not believing that \( p \) would rationally require us to form very few beliefs, we should give up belief that \( p \) only as a last resort, only if we have sufficient reason to believe that \( \sim p \). Some propositions (in this case \( p \)) come with a presumption in their favor, such that the mere underdetermination of \( p \) by my subjective state, for example, does not warrant doubt. For belief that \( p \) will have excellent results—I will be able to form a great many beliefs, and I must do this if I am to know a great many things. And hence belief that \( p \) is epistemically justified unless one has sufficient reason to believe \( \sim p \). The proposition that there is an external world is such a \( p \). This entails (+).\(^{71}\)

There are many points in this argument which may strike one as unsatisfactory. First, it is not clear how many beliefs count as a “great many” or “very few”. Second, and more importantly, it is not clear that failing to believe that there is an external world would limit us to forming “very few” beliefs. Someone who did not believe that there is an external world because she was a solipsist, for example, could still form an enormous number of beliefs. She could form beliefs about her mental states, beliefs

\(^{71}\) Hazlett (2006) pgs. 204-205
about mathematics, beliefs about various conceptual truths, etc. She could also form a vast number of conditional beliefs of the form “if there is an external world, then __”. If this person decided to add to her beliefs by believing disjunctions of her beliefs, the number of her beliefs would only be limited by the amount of time and energy she could devote to thinking up disjunctions. Thus, it seems quite plausible that the solipsist could form as many beliefs as the person who believes that there is an external world. Surely, if the person who believes that there is an external world can form a “great many” beliefs, so can the solipsist. Third, it is not clear that just because believing p will help S achieve an epistemic goal, believing p is thereby justified unless she has sufficient reasons to believe ~p. For instance, suppose Descartes’ Demon promises S that if she believes that she has six fingers on her right hand, he will tell S anything she wants to know; thus helping her achieve her epistemic goal of knowing a “great many” things. Further, imagine that the demon promises to take away all of S’s current beliefs and stop her from forming future beliefs, if she fails to believe that she has six fingers on her right hand. Assuming that S does not have six fingers on her right hand and she has had, and continues to have, normal experiences of her right hand, it seems that S is not justified in believing that she has six fingers on her right hand because she has strong evidence that this is not the case. S does not seem to be justified in believing that she has six fingers on her right hand even though doing so would be a huge help to her in achieving her epistemic goal of knowing a great many things and failing to do so would be disastrous for her achieving that goal. Further, if S happened to believe that she has
six fingers on her right hand in this case and the Demon removes her evidence to the contrary so that S has no evidence regarding this proposition at all, it does not seem that she is justified in believing that she has six fingers on her right hand. Additionally, in this case it does not seem that S is justified in continuing to believe that she has six fingers on her right hand until she has sufficient evidence that she does not have six fingers on her right hand. Intuitively, whether or not holding a belief helps S achieve her epistemic goals cannot make continuing to hold that belief justified if S lacks sufficient evidence in support of the belief.\textsuperscript{72}

In light of the problems with Hazlett’s arguments it is at least unclear that he has shown that Security is true. So, it is unclear that Hazlett’s arguments provide reason to think that UP* or U1* is false. Perhaps there are ways to satisfactorily respond to the objections that I have mentioned for Hazlett’s arguments, and if so, Hazlett’s argument poses a serious obstacle for the skeptic. However, it is not obvious that there are good ways to respond to these objections. Thus, at this point it is at least unclear that Hazlett has provided a strong enough reason to doubt UP*.

Given this and the fact that UP* seems intuitively plausible, it is reasonable to accept UP* as true. Since UP* is reasonable to accept, it is reasonable to accept U1*.

Now that this potential challenge for U1* has been explored, it is time to consider the only other premise in Underdetermination*, U2*. Since the truth of U1* is often granted by both skeptics and anti-skeptics and U2* is the only other premise in this argument, it should come as no surprise that U2* is highly contentious. U2*

\textsuperscript{72} See Brueckner (2007) for a similar, but different, argument against Hazlett’s position.
claims that our evidence does not favor CS over skeptical alternatives (I will refer to two or more hypotheses that are equally supported by the evidence as ‘underdetermined’). If U2* is true, game over. The skeptic wins. But, why should we think U2* is true? What support does the skeptic offer in its defense? Typically, the skeptic offers stories in support of U2*. This is not to belittle the skeptic’s position or to make it sound trivial in any way. The stories that the skeptic offers are powerful tools for supporting this premise. We are all familiar with the classic stories the skeptic tells—you could have all of the same experiences that you have now, if instead of being awake in a world that contains a large number of medium-sized dry goods, you are dreaming or being deceived by an extremely powerful demon or you are a brain-in-vat hooked up to an especially stimulating supercomputer, etc. All of these skeptical stories attempt to show the same thing, namely, that it is possible for us to have all of the sensory experiences that we have without there being an external world. In other words, the skeptical stories are attempts to show that CS and various SAs are empirically equivalent. The skeptic has demonstrated that CS and various SAs are empirically equivalent if and only if he has shown that “they have the same class of empirical, viz., observational consequences.”\footnote{Laudan and Leplin (1991) pg. 451.} So, for the skeptic’s stories to be successful they have to establish that CS and various SAs each independently entail that we have the same set of sensory experiences.\footnote{Here and throughout the remaining discussion I will be assuming a deterministic framework for simplicity. Of course, CS and various SAs can be empirically equivalent even if determinism is false.}
stories are successful, they demonstrate that we could have all of the same sensory experiences that we actually have if instead of CS being true, one of the various SAs is true.

Are the skeptic’s stories successful? Probably to some degree. Is their success enough to establish that U2* is true? No, at least not by itself. What the skeptic needs is a way of connecting the empirical equivalence of CS and SA to a parity of evidence for CS and SA. So, the skeptic needs a sub-argument in support of U2* such as:

U2*-1) CS and SA are empirically equivalent.

U2*-2) If CS and SA are empirically equivalent, then S’s evidence does not favor CS over SA.

U2*) Therefore, S’s evidence does not favor CS over SA.

So, the skeptical argument that appeals to an underdetermination principle is a bit more complex than how it is usually presented. Thus, instead of Underdetermination*, the skeptical argument to focus on is an enhanced version of Underdetermination*:

\[\text{Underdetermination-E}\]

UE-1) If S’s evidence does not favor CS over SA, then S’s evidence does not propositionally justify CS for S.

UE-2) CS and SA are empirically equivalent.

If determinism is false, CS and a SA are empirically equivalent if and only if they entail the same probabilities for our having various sensory experiences.
UE-3) If CS and SA are empirically equivalent, then S’s evidence does not favor CS over SA.

UE-4) Therefore, S’s evidence does not favor CS over SA.

UE-5) Therefore, S’s evidence does not propositionally justify CS for S.

UE-6) Therefore, CS is not propositionally justified for S.\(^{75}\)

Now that the details of the skeptic’s argument are clearer it will be possible to explore various challenges that the skeptic faces when trying to support the premises of *Underdetermination-E*.

### 2.3 Preliminary objections to *Underdetermination-E*

As one might have guessed from the previous section’s discussion, the challenges the skeptic faces in supporting *Underdetermination-E* concern the support for the contentious claim that “S’s evidence does not favor CS over SA”. The skeptic supports this sub-conclusion of *Underdetermination-E* with two premises: UE-2 and UE-3. There are various objections that have been raised for both of these premises. I will explore the nature of these objections and how they affect the skeptic’s argument beginning with those arising from the skeptic’s need to support UE-2.

\(^{75}\) As noted above, I am assuming that S knows that CS and SA are incompatible. So, the relevant premises of *Underdetermination-E* should be understood to include the assumption that S knows that CS and SA are incompatible.
2.3.1 Objections to UE-2

At first glance one might think that supporting UE-2 does not pose any difficulties for the skeptic. After all, Descartes described two skeptical scenarios both of which seem to give us strong reasons for thinking that CS and SA are empirically equivalent, which is to say, Descartes provided two good reasons for thinking that UE-2 is true. Other skeptical scenarios such as the possibility that we are brains-in-vats receiving inputs that simulate sensory experiences or that we are in the Matrix seem to establish the truth of UE-2 as well.

Although it is plausible that the skeptic can provide adequate support for this premise, it is not clear that this is a simple matter that can be easily accomplished. First of all, Michael Gardner (1976) argues that empirical equivalence is unintelligible because it is not possible to satisfactorily define what counts as the “observable consequences” of a hypothesis. The idea is that if we cannot say what the observable consequences of a given hypothesis are, we cannot determine whether another hypothesis has the same observable consequences. That is to say, if we cannot determine the observable consequences of a hypothesis, we should not conclude that another hypothesis is empirically equivalent to it.

I do not find the unintelligibility worry very pressing for the skeptic. However, since some people have argued that the worry should be pressing in other contexts and because distinguishing real difficulties for the skeptic from those that only appear to be difficulties is important for fully understanding the skeptic’s task, this worry is at least worth briefly considering. That being said, it is reasonable to
think that the proposed unintelligibility of empirical equivalence is not a serious problem for the skeptic. The skeptic can respond to this worry in two ways without engaging Gardner’s arguments directly. The first way is to simply point out that for the skeptic’s purpose the only observable consequences that matter are our sensory experiences. So, he can restrict his claim of empirical equivalence to producing the same sensory experiences as CS. The second way that the skeptic can respond is by noting that he can generate a skeptical alternative to CS that has the same observable/empirical consequences as CS by stipulation. There does not seem to be anything wrong with the skeptic claiming that Descartes’ Demon could be producing all of the same observable consequences as CS whatever those observable consequences happen to be. The same could be said of other skeptical hypotheses. Thus, the skeptic appears to have reasonable ways of dealing with this worry.

Another challenge some think faces the skeptic in supporting UE-2 comes from consideration of the problem of identical rivals. The problem of identical rivals concerns the difficulty of determining when two empirically equivalent hypotheses are genuine rivals and not merely alternative formulations of the same hypothesis. Some worry that CS and various SAs might be identical rivals. That is, some worry that because of the structural similarities of CS and SAs, the CS statement “There are three chairs in this room” and the SA statement “An evil Demon is giving me sensations as if there are three chairs in this room” are actually saying

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76 See Magnus (2003) for a nice description of the problem as it applies to scientific theories.
the same thing. Hence, some worry that the various SAs are merely notational variants of CS. 77

Though the identical rivals problem is a legitimate concern when considering some scientific theories, it is not a problem for the skeptic. The claim that CS and SAs are notational variants of one another is only plausible if one accepts an extreme verificationist theory of meaning, where the meaning of a statement is determined solely by the observations that could be made to verify the statement. Since the verificationist theory of meaning is highly implausible and intuitively CS and the SAs are making very different claims, this worry does not seem to be a serious problem for the skeptic. 78

Although the problem of identical rivals does not seem to be a problem for the skeptic’s defense of U2-E, it is worth mentioning because it points toward one constraint on the alternatives to CS that the skeptic can reasonably appeal to in motivating his argument. The skeptic cannot simply offer an alternative such as (~CS) & CS* (where ‘CS*’ = the observational consequences of CS). First, since (~CS) & CS* is completely derivative of CS, its structure is so close to the structure of CS that it is extremely difficult to establish that it is not merely a variant of CS. Second, it seems likely that (~CS) & CS* is not an alternative to CS, because it is not a genuine hypothesis at all. (~CS) & CS* seems to merely be the denial of CS and as Jarrett Leplin (1997) aptly notes “To deny a theory is not to assert one, and to list

77 See Horwich (1982a) for an argument to this effect.
78 See Hempel (1950) for a classic exposition of the flaws of the verificationist theory of meaning.
observations is not to theorize about them.”  

So, there seem to be good reasons to think that (~CS) & CS* is not a genuine alternative to CS. Thus, while the identical rivals problem may not affect the skeptic’s argument, it does bring to light a plausible constraint on what counts as an acceptable skeptical alternative for the purposes of supporting UE-2.

### 2.3.2 Objections to UE-3

Another source of difficulty for the skeptic comes from premise UE-3, “If CS and SA are empirically equivalent, then S’s evidence does not favor CS over SA”. This premise is an instance of a more general principle, which says “If two hypotheses are empirically equivalent, then the evidence does not favor one over the other”. The problems for UE-3 stem from the fact that there are good reasons to think that underdetermination is not entailed by empirical equivalence. That is to say, there are good reasons to think that the general principle, of which UE-3 is an instance, is false.

Larry Laudan and Jarrett Leplin (1991) convincingly argue that underdetermination is not entailed by empirical equivalence. Laudan and Leplin’s argument is roughly the following:

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79 Pg. 207

80 Huemer (2000) and Vogel (2005) both express doubts about whether proposed hypotheses like (~CS) & CS* are genuine hypotheses.

81 For further discussion of Laudan’s and Leplin’s arguments and the relation of empirical equivalence to underdetermination see Leplin (1997), Leplin and Laudan (1993), and Kukla (1993) and (1996).
1) A hypothesis can be confirmed by observations that are not part of its empirical consequences.

2) Observation of empirical consequences of a hypothesis does not always provide evidence for the hypothesis.

3) If (1) and (2), then it is not the case that if two hypotheses are empirically equivalent, then they are underdetermined.

4) Therefore, it is not the case that if two hypotheses are empirically equivalent, then they are underdetermined.

In support of the first premise, Laudan and Leplin describe the sort of situation where a hypothesis is confirmed by an observation that is not part of its set of empirical consequences, and further, they describe an empirically equivalent hypothesis that is not confirmed by that observation. That is, they present an example in which two empirically equivalent hypotheses are supported to different degrees by a given piece of evidence. The sort of example that Laudan and Leplin present

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82 It should be noted that if the example presented by Laudan and Leplin actually demonstrates that two empirically equivalent hypotheses can gain different degrees of evidential support from an observation, the example alone is sufficient to demonstrate that empirical equivalence does not entail underdetermination. This is a fact that Laudan and Leplin recognize, however, they present the rest of their argument to drive home their point. I follow Laudan and Leplin in presenting their entire argument instead of just this example because understanding the full argument helps to illuminate the nature of the relation between empirical equivalence and underdetermination.
involves two distinct, empirically equivalent hypotheses, $H$ and $H^*$.\textsuperscript{83} $H$, but not $H^*$, is a consequence of a larger theory, $T$. Additionally, a further hypothesis $X$, which is not a consequence of either $H$ or $H^*$, is entailed by $T$. Now, in this sort of situation Laudan and Leplin argue that when $E$, an empirical consequence of $X$, obtains it provides evidential support for $X$. $E$ also provides some evidential support for $T$ because $X$ is entailed by $T$. Since $E$ provides evidential support for $T$, it provides some indirect support for hypotheses entailed by $T$ including $H$. So, it is possible for a hypothesis to be confirmed by observations that are not empirical consequences of that hypothesis. What is more, this example also demonstrates that two empirically equivalent hypotheses can gain different degrees of evidential support from an observation. It is quite reasonable to assume in this case that $E$ does not provide evidential support for $H^*$. Thus, $E$ provides evidence for $H$ and not $H^*$. Therefore, there can be evidence that supports empirically equivalent hypotheses to different degrees. Thus, the fact that two theories are empirically equivalent does not entail that they are underdetermined.

Concerning the second premise of their argument, Laudan and Leplin employ an example in support of their premise. Here is their example:

Suppose a televangelist recommends regular reading of scripture to induce puberty in young males. As evidence for his hypothesis ($H$) that such readings are efficacious, he cites a longitudinal study of 1000 males in

\textsuperscript{83} What follows is my expression of the example that Laudan and Leplin describe. It closely mirrors their presentation in Laudan and Leplin (1991) pg. 464.
Lynchburg, Virginia, who from the age of seven years were forced to read scripture for nine years. Medical examinations after nine years definitively established that all the subjects were pubescent by age sixteen. The putative evidential statements supplied by the examinations are positive instances of H. But no one other than a resident of Lynchburg, or the like-minded, is likely to grant that the results support H.\textsuperscript{84}

The gist of this example is straightforward. Laudan and Leplin believe that it is obvious that the evidence from the study of the sixteen-year-olds is not evidence in support of H. So, they conclude that this case clearly demonstrates that observing empirical consequences of a hypothesis does not always provide evidence for the hypothesis.

Finally, with regard to the third premise of this argument Laudan and Leplin correctly note that the truth of premises one and two entail that an observation’s being an empirical consequence of a hypothesis is neither necessary nor sufficient for that observation to provide evidential support for the hypothesis. Since the empirical consequences of a hypothesis are not the only things that are relevant to the evidential support of a theory, we have no reason to infer that the two hypotheses are underdetermined because of their empirical equivalence.

Although Laudan and Leplin are successful, to at least some degree (more on this qualification shortly) in showing that empirical equivalence does not entail underdetermination, I have reservations concerning their argument. My main worry

\textsuperscript{84} Laudan and Leplin (1991) pg. 465
with Laudan and Leplin’s argument is that I do not find their support for premise two convincing, even though I am not a resident of Lynchburg, nor do I consider myself to be likeminded to them. I think at best Laudan and Leplin’s televangelist example demonstrates that the evidence provided by observation of the empirical consequences of a hypothesis can be defeated by other information. In their example the evidence that the observation that the sixteen-year-olds are pubescent provides for H is defeated by the fact that we have very good reasons for thinking that the maturation that comes with age alone explains why the sixteen-year-olds are pubescent. So, when considering Laudan and Leplin’s example we are not inclined to think that H is supported in the sense that H is a plausible hypothesis because we have a defeater for thinking that what explains the boys being pubescent is the truth of H, namely, our good reasons for thinking that the maturation that comes with age is a much better explanation of the boys being pubescent. However, if we did not have this further information concerning the nature of puberty and when it typically occurs in males, we may be inclined to think that H is plausible because of the evidence that the observation of the pubescentness of the sixteen-year-olds provides, assuming that we are not aware of some other potential cause of the boys reaching puberty by that age. Consequently, it is reasonable to think that H actually is supported by the observation that that the boys are pubescent by age sixteen, but the support that this observation confers on H is undercut by other information that we possess. Thus, it is not clear that Laudan and Leplin successfully defend their second premise.\textsuperscript{85}

\textsuperscript{85} In fact I am inclined to think that premise two is false. That is, I am inclined to think that
Even though Laudan and Leplin do not provide conclusive support for premise two, the conclusion of their argument can still go through. In fact, as noted above, the example that Laudan and Leplin use to defend their first premise is sufficient to establish their conclusion. Recall that in that example Laudan and Leplin present two empirically equivalent hypotheses, \( H \) and \( H^* \). These two empirically equivalent hypotheses gain different amounts of evidential support from the same observation because the observation supports a broader theory, \( T \), which entails \( H \), but not \( H^* \). The fact that this sort of situation is possible implies that it is not the case that empirical equivalence entails underdetermination. The truth of Laudan and Leplin’s conclusion seems to spell disaster for the skeptic’s argument because it is a denial of the general principle of which the skeptic’s premise UE-3 is an instance.

Unfortunately, the skeptic’s argument is not so easily defeated. Despite the fact that Laudan and Leplin do demonstrate that it is not the case that if two hypotheses are empirically equivalent, then the evidence does not favor one over the other, this is not enough to show that the skeptic’s argument, *Underdetermination-E*, is unsound. The reason is that there is a restricted version of the principle that if two hypotheses are empirically equivalent, then the evidence does not favor one over the other, which is immune to the attack Laudan and Leplin make. As Hoefer and

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observation of empirical consequences of a hypothesis always provides evidence for the hypothesis. I think that this evidence might be very slight and it is certainly defeasible, but I think it is evidence nonetheless. I realize that this view is controversial; however, I will not attempt to defend it here because nothing of what follows will hang on it.
Rosenberg (1994) correctly point out, the examples Laudan and Leplin employ are dependent upon the fact that the empirically equivalent rivals are partial hypotheses. In the successful example that Laudan and Leplin present in support of premise one, what allows for one hypothesis to gain evidential support that its empirically equivalent rival does not is the fact that only the former is entailed by a broader theory, which gains evidential support from a particular observation. However, in the case of total theories, that is hypotheses that cover all observations, there are no broader theories in which they can be embedded. Thus, Hoefer and Rosenberg rightly claim that the example which Laudan and Leplin offer “cut[s] no ice in the case of empirically equivalent total theories.” Therefore, a restricted version of the principle mentioned above such as “if two total theories are empirically equivalent, then the evidence does not favor one over the other” is not shown to be false by Laudan and Leplin’s argument. So, the skeptic’s premise UE-3 is not vulnerable to Laudan and Leplin’s argument provided the hypotheses mentioned in the argument are understood to be total theories, which seems plausible.

Although the restricted principle is not shown to be false by Laudan and Leplin’s argument, one might still worry about its truth. For instance, Jarrett Leplin (1997) argues that even this restricted principle is false. Leplin argues that individual observations can still provide more evidence in support of a particular total hypothesis than they do for its empirically equivalent rivals. According to Leplin, the reason that this is the case is that one total hypothesis may predict the observation,

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86 Hoefer and Rosenberg (1994) pg. 600
whereas the other total hypotheses may only accommodate the observation. Given the fact that Leplin’s argument rests on a contentious assumption that prediction provides better evidence than accommodation, I will simply note here that if Leplin’s argument is sound, the proposed restriction to total theories does not eliminate the skeptic’s difficulties in defending UE-3.\textsuperscript{87}

In light of these considerations, it is reasonable to conclude that the preliminary objections considered here do not demonstrate that UE-3 is false, and thus, they do not establish that the skeptic’s argument is unsound. However, these considerations do illuminate the fact that the skeptic is forced to impose an important restriction on the kind of argument that he makes, if the argument is to have any hope of being acceptable. The skeptic cannot hope to make a successful argument using a partial-local version of \textit{Underdetermination-E}; he must employ a full-local version because partial-local versions of \textit{Underdetermination-E} are susceptible to Laudan and Leplin’s argument against UE-3.\textsuperscript{88} Further, if Leplin is correct, then the skeptic may have no hope of defending UE-3. At the very least, the skeptic’s move from the empirical equivalence of CS and SA to their being underdetermined should not be granted as clearly unproblematic.

\textsuperscript{87} For discussion of the prediction/accommodation debate and the difficulties arising from it see Horwich (1982b), Lipton (2004), and Schlesinger (1987).

\textsuperscript{88} Recall from chapter one that partial-local skeptical arguments make a claim about some, but not all, propositions within a particular class, while full-local skeptical arguments make a claim about all propositions within a particular class.
2.4 Concluding and Looking Forward

In this chapter I have argued that Underdetermination cannot serve the skeptic’s purposes because it is reliant upon an implausible underdetermination principle. Additionally, I argued that an improved version of this argument, Underdetermination*, which relies upon a more plausible underdetermination principle, is also unacceptable because a key premise in that argument, U2* (“S’s evidence does not favor CS over SA”), needs to be supported by a sub-argument. So, I suggested that the best way to proceed is for the skeptic to make use of Underdetermination-E, which supplies the needed sub-argument in support of U2*.

Close examination of Underdetermination-E has revealed several challenges facing the skeptic in supporting his argument. First, the skeptic must provide a skeptical alternative to CS that is empirically equivalent to CS and yet distinct from CS. Though I think the skeptic can accomplish this task, it is important to note that doing so is not a trivial matter. Second, the skeptic faces serious difficulties motivating premise UE-3 of Underdetermination-E, which says “If CS and SA are empirically equivalent, then S’s evidence does not favor CS over SA”. Difficulties arise because the general principle of which this premise is an instance is contentious. There are some strong arguments for the conclusion that an unrestricted formulation of the general principle is false. At the very least, the arguments against this general principle demonstrate that the skeptic must make his attack on CS using a full-local version of Underdetermination-E because a partial-local version of Underdetermination-E is vulnerable to Laudan and Leplin’s argument against the
principle. With these insights about the kind of argument that the skeptic needs in order to attack CS in hand, I will turn toward defending CS from the skeptic’s attack in the succeeding chapters.
Chapter 3: The Explanationist Response to Skepticism

3.1 Introduction

In the previous chapter I examined the skeptic’s argument, *Underdetermination-E*, and various constraints on how he can plausibly use this argument to make his attack on our justification for external world beliefs. Now that the nature of the skeptic’s argument has been made clear, it is possible to determine how one might respond to this argument. Before proceeding it is important to be clear about what a response to skepticism needs to do in order to be considered adequate. There are four things that an acceptable response to skepticism must do. First, the response to skepticism needs to explain what is wrong with the skeptic’s argument. Second, the response should provide an explanation for why we, at least sometimes, find skeptical arguments worrisome. Third, the response should allow for ordinary people to have justification for their beliefs when they are not presented with challenges from the skeptic. Fourth, a successful response to skepticism should explain how it is that we can retain our justification while facing skeptical challenges.

In this chapter I will argue that a particular response to skepticism can satisfy all four of these criteria. The response that I am referring to relies on inference to the best explanation to meet the skeptic’s challenge. Very roughly, the gist of this response to skepticism is that since our commonsense view that there is an external world containing objects that are approximately how we ordinarily take them to be is a better explanation than all skeptical competitors, the choice between our
commonsense view and skeptical alternatives is not underdetermined. Sometimes this response is referred to as the “abductivist” response to skepticism. However, this name is somewhat misleading because there are reasons for thinking that abduction and inference to the best explanation are not the same. In light of this fact, I will follow Jonathan Vogel and refer to this response to skepticism as the “Explanationist Response”. Although the Explanationist Response is not a new idea and it has been put forward by a number of philosophers as a response to skepticism, it has not been made clear exactly how this response does all of the things that we want a response to skepticism to do. The goal of the present chapter is to make it clear how the Explanationist Response can do all four of the things that we desire from a response to skepticism.

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89 See for example Beebe (2009).

90 See Hintikka (1998) and Minnameier (2004) for arguments that abduction and inference to the best explanation are distinct.

91 Vogel (Manuscript)

3.2 Preliminaries

3.2.1 Inference to the Best Explanation

It is important to get clear on a few things before exploring how the Explanationist Response satisfies the four criteria mentioned above. First, since this response is essentially an appeal to inference to the best explanation, it is important to spell out exactly what is meant by inference to the best explanation. In simplest terms the idea behind inference to the best explanation is that explanatory virtues are a guide to truth. That is to say, “the explanation that would, if true, provide the deepest understanding is the explanation that is likeliest to be true.”\textsuperscript{93} More schematically:

\begin{align*}
F_1, F_2, \ldots, F_n \text{ are facts in need of explanation.} \\
\text{Hypothesis } H \text{ explains the } F_i. \\
\text{No available competing hypotheses would explain the } F_i \text{ as well as } H \text{ does.}
\end{align*}
\[\therefore H \text{ is true.}\textsuperscript{94}

Something like this formulation seems to be what most people have in mind when they speak of inference to the best explanation. However, Alan Musgrave (2006) offers the following, quite distinct, formulation of inference to the best explanation:

\begin{quote}
*It is reasonable to believe that* the best available explanation of any fact is true.
\end{quote}

\begin{align*}
F & \text{ is a fact.} \\
\text{Hypothesis } H & \text{ explains } F.
\end{align*}

\textsuperscript{93} Lipton (2004) pg. 61

\textsuperscript{94} Lycan (2002) pg. 413 Also, see Lycan (1988) for a similar, but different formulation. The primary difference is that Lycan’s (1988) formulation has the conclusion that “[probably] H is true” instead of “H is true”.
No available competing hypothesis explains F as well as H does. Therefore, it is reasonable to believe that H is true.

The most obvious difference between these two formulations is that there are readings of the latter in which it is deductively valid, whereas there are not such readings of the former. Essentially, the difference between the two formulations, however they are read, is that Musgrave adds a premise that licenses inference to the best explanation in his formulation. It is not clear to me that this move is necessary. However, since it is not clear that anything of importance for the current project will hang on which formulation we accept because the Explanationist Response is compatible with both, I will not attempt to adjudicate between the two here. That being said, I will follow the majority and assume that inference to the best explanation should be formulated in the first way rather than how Musgrave proposes.

There are a number of points about the above formulation of inference to the best explanation that need to be clarified. First, the line “F₁, F₂, …, Fₙ are facts in need of explanation” needs to be made clearer. Specifically, it is important to consider what counts as a “fact”. I will be assuming a commonsense notion of this term. So, facts are simply evidence that we have and which are taken as given. For example, in a scientific setting the “facts” are typically the experimental observations that have been made. With respect to the current endeavor, responding to skepticism, the facts are the qualitative characters of our sensory experiences, their continuity over time, their involuntary nature, and so on.
Second, it is important to say a bit about what it means for H to explain a fact or set of facts. Often an explanation is thought to be something that provides understanding. So, when H explains F, H provides understanding of F. The most straightforward way to make sense of this idea is as H providing an answer to a “why-question”—why did F occur, why is F true, or why does F have the features that it does? Explanations construed as answers to why-questions can be understood both causally and non-causally. For present purposes, causal explanation is what matters. Responding to skepticism, involves explaining why we should think that our sensory experiences are caused by a world of external objects instead of a demon or a supercomputer or something else. Although there is a vast literature on the nature of explanation, for the task of responding to the skeptic the intuitive idea that an explanation involves answering various why-questions about the causal history of the features of our sensory experiences should suffice.

Third, it is important to note that an actual explanation of a phenomenon is true. So, the explanations referred to in the above formulation should be understood as potential explanations. Potential explanations are such that they would provide understanding of the phenomenon to be explained if they were true. Thus, when

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95 See for example Moser (1989), Woodward (2003), and Strevens (2000) and (2008).
97 For a sampling of some of the various accounts of explanation see Hempel (1965), Kitcher (1981), (1985), Salmon (1989), Woodward (2003), and Strevens (2008).
making an inference to the best explanation one is inferring that the best potential explanation is an actual explanation.

Fourth, the line “No available competing hypotheses would explain the F as well as H does” contains two points that need clarification. One point that needs clarified is what is meant by “available” hypotheses. Admittedly, there are some difficult issues in trying to say when exactly an explanation is available to someone. For instance, it might be thought that for hypothesis H to be available to S, S must be consciously aware of H. Alternatively, one might think that H is available to S so long as S possesses the requisite concepts and cognitive abilities to understand H. Though giving precise availability conditions for an explanation is difficult, one thing seems indisputable; if S is consciously aware of H and she understands H, then H is available to her. It seems plausible that satisfaction of a much weaker condition is all that is required for S to have a hypothesis available to her, however, this issue is not one that has to be settled in order for the Explanationist Response to be evaluated.

When the skeptic presents his alternatives to our set of commonsense external world beliefs (CS), it is plausible that in addition to CS we also have various skeptical alternatives (SAs) available to us. These are the only hypotheses that we are concerned with when responding to skepticism.

Another point that needs to be clarified is what it means for hypotheses to be “competing”. Competing hypotheses are simply contrary hypotheses that offer explanations of a fact or set of facts. For example, the hypothesis that my current visual experience as of a computer screen is caused by my looking at a computer
screen in good lighting and the hypothesis that my current visual experience as of a computer screen is caused by my invatted brain being stimulated by a super computer are competing hypotheses. However, the hypothesis that purports to explain why ice melts in water by appealing to modern chemistry is not a competitor for the hypothesis that purports to explain this phenomenon by appealing to quantum mechanics. The reason that the former pair of hypotheses, but not the latter are competitors is that the former pair are contraries while the latter are not.

Fifth, it is important to understand what it means to say that no available hypothesis explains F as well as H does. This is essentially the claim that the explanation that is inferred to be true must be the best available explanation. Before continuing it is worth considering what might make one explanation better than another. There are a host of explanatory virtues that have been identified in the literature: various kinds of simplicity, explanatory power (the range of phenomena explained and/or how illuminating the explanation is), coherence with background information, non-ad hocness, conservatism, and raising less unanswered questions are just a few.98 In general, inferences to the best explanation evaluate the various available hypotheses in terms of their explanatory virtues and infer that the most virtuous hypothesis is (likely) true. Peter Lipton (2004) offers the following straightforward construal of what it means for something to be the best explanation: “we may characterize the best explanation as the one which would, if correct, be the

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98 See Beebe (2009) for a nice list of explanatory virtues that have been proposed in the explanation literature.
most explanatory or provide the most understanding." So, according to Lipton, even if various competing hypotheses each explain all of the relevant facts, there can still be a best explanation among these competitors. The best explanation is the one that, if true, would provide the most understanding of the causal production of the facts being explained.

Sixth, another key point that needs to be clarified is that the mere fact that a potential explanation is the best available explanation is not enough for the truth of that explanation to be inferred. The best must also be a good (enough) explanation of the phenomena in question. That is to say, in order for an explanation to be legitimately inferred as true because it is the best available explanation the explanation needs to meet certain minimal standards. Admittedly, it may be a difficult task to make these minimal standards explicit. However, for current purposes an intuitive understanding should be sufficient. To help make the general idea clearer consider the following sort of example:

S has available three competing explanations for a particular phenomenon, which has ten points of data that require explaining. $H_1$, $H_2$ and $H_3$ each individually explain one of these data points, but offer no explanation of the other nine.

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99 Pg. 59

100 For more on this see Lipton (2004) and Vogel (1998).
Intuitively, in this example S should not infer that the best of the three explanations, $H_1$ say, is true because it does not sufficiently explain the relevant data.

Alternatively, consider the following example:

S has available three competing explanations for a particular phenomenon, which has ten points of data that require explaining. $H_1$, $H_2$ and $H_3$ each individually explain all ten of these data points.

Whichever explanation is best $H_1$, $H_2$ or $H_3$ clearly meets the standards of being a good (enough) explanation of the data. Admittedly, there are difficult cases that lie between these two examples; however, the intuitive idea behind the restriction is fairly clear. Thus, an important caveat for our understanding of inference to the best explanation is that it is not enough to be the best available explanation, the inferred explanation must be the best available explanation and it must be a minimally good explanation of the relevant data.

One final point related to inference to the best explanation that is worth mentioning is that inference to the best explanation is extremely pervasive. As Clark Glymour (1984) aptly notes “One can find such arguments [inferences to the best explanation] in sociology, in psychometrics, in chemistry and astronomy, in the time of Copernicus, and in the most recent of our scientific journals.”

There are several instances in the history of science where inference to the best explanation has been employed, for example Antoine Lavoisier’s argument against phlogiston theory in favor of the oxygen theory of combustion, Christiaan Huygens’ argument in support

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101 Pg. 173
of the wave theory of light, and, of course, Charles Darwin’s argument in support of natural selection. In addition to being widely used in the sciences, inference to the best explanation is employed in everyday life from jurors hearing a trial to a doctor forming a diagnosis on the basis of a patient’s symptoms to someone’s determining what is wrong with her computer when the screen stays black. Inference to the best explanation is so pervasive in our reasoning that some have argued that it is plausible to think that it is a basic belief forming method for humans. Whether or not we think that inference to the best explanation is a basic belief forming method is not of the utmost importance, but what is key is that it is recognized that inference to the best explanation is a method of inference that is widely used and widely accepted as a legitimate method of inference. This fact is extremely important because given that inference to the best explanation is one of our accepted methods of reasoning, it is reasonable to think that skeptical arguments which deny that inference to the best explanation is a legitimate method of inference are forms of exotic skepticism. Since the kind of skepticism that is the focus of this project is domestic skepticism, it

102 See Thagard (1978) for a more complete description of these arguments.

103 See Enoch and Schechter (2008).

104 See Vogel (2005) and (Manuscript) for arguments that skeptical arguments which deny inference to the best explanation collapse into the familiar Humean inductive skepticism, a kind of exotic skepticism.
will be assumed throughout that inference to the best explanation is an acceptable inference method.\textsuperscript{105}

\textbf{3.2.2 Explanationist Response and Explanationism}

One further point is in need of clarification before proceeding to consider how the Explanationist Response to skepticism satisfies the four criteria mentioned above. The relation between the Explanationist Response and the epistemological view known as “Explanationism” needs to be made clear because some mistakenly assume that accepting the Explanationist Response commits one to accepting strong forms of Explanationism.\textsuperscript{106}

To begin, William Lycan (2002) distinguishes between four kinds of Explanationism: Weak, Sturdy, Ferocious, and Holocaust. Weak Explanationism is the view that an inference to the best explanation can provide justification for its conclusion. Sturdy Explanationism adds to Weak Explanationism that an inference to the best explanation provides this justification on its own. That is to say, Sturdy Explanationism is the view that inference to the best explanation is not derived from some more basic form of ampliative inference. Ferocious Explanationism is the view

\textsuperscript{105} In chapter five I will examine various objections to the Explanationist Response, some of which rely upon attacking the legitimacy of inference to the best explanation. Though these sorts of objections cannot impugn my project of responding to domestic skepticism, I will say a bit about how one might defend inference to the best explanation from these objections in that chapter.

\textsuperscript{106} For example, see Beebe (2009).
that the only basic form of ampliative inference is inference to the best explanation; all other forms are derived from it. Holocaust Explanationism is the view that all forms of inference, ampliative and otherwise, are derived from inference to the best explanation. In other words, Holocaust Explanationism holds that all inference is reducible to inference to the best explanation.

As might be expected there has been much controversy concerning the truth of the various kinds of Explanationism. For present purposes it will not be necessary to go into the details of this debate. Instead, all that is needed at this point is recognition that the Explanationist Response to skepticism, while consistent with all four kinds of Explanationism, is only committed to the truth of Weak Explanationism. All that is required for the Explanationist Response is that inferences to the best explanation can provide justification for their conclusions. So, even if one finds the other stronger forms of Explanationism implausible, she should not simply dismiss the Explanationist Response on those grounds.

Now that these points have been made clear it is time to turn toward the examination of how the Explanationist Response fulfills the four criteria for an acceptable response to skepticism.

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108 Some of the issues in this debate will come up in chapter five when I examine objections to the Explanationist Response to skepticism. So, I will set them aside until then.


3.3 Satisfying the Criteria

3.3.1 Criterion 1: What’s Wrong With the Skeptic’s Argument

Aside from perhaps some contextualists and skeptics, almost everyone agrees that a proper response to skepticism must make reasonable the conclusion that the skeptic’s argument is unsound.\(^\text{109}\) So, the first thing that the Explanationist Response needs to do in order to be a successful response to skepticism is to explain what is wrong with the skeptic’s argument. In the previous chapter I argued that the skeptical argument that deserves consideration is the following:

\begin{center}
Underdetermination-E
\end{center}

\begin{enumerate}
    \item UE-1) If S’s evidence does not favor CS over SA, then S’s evidence does not propositionally justify CS for S.
    \item UE-2) CS and SA are empirically equivalent.
    \item UE-3) If CS and SA are empirically equivalent, then S’s evidence does not favor CS over SA.
    \item UE-4) Therefore, S’s evidence does not favor CS over SA.
    \item UE-5) Therefore, S’s evidence does not propositionally justify CS for S.
\end{enumerate}

\(^{109}\) As Richard Feldman (2001) points out “Contextualists hold, however, that the arguments for skepticism are sound, or at least that their conclusions are true in the contexts in which they are discussed” (pg. 62).
UE-6) Therefore, CS is not propositionally justified for S.\textsuperscript{110}

As explained in chapter two, the contentious premises in this argument are UE-2 and UE-3. Thus, it seems that the most promising ways of responding to this argument involve attacking one or the other of these premises. This is exactly what the Explanationist Response does. According to the Explanationist response, the problem with Underdetermination-\textit{E} is that premise UE-3 is false.\textsuperscript{111}

In order to see how the Explanationist Response provides an argument for the falsity of UE-3 it will be instructive to first consider how inference to the best explanation makes it reasonable to deny the general principle of which UE-3 is an instance. This general principle is the claim that empirical equivalence entails underdetermination. More precisely, the general principle claims that if two hypotheses are empirically equivalent (they have the same set of observational consequences), then they are underdetermined (the evidence does not favor one over the other). Inference to the best explanation provides a way of denying that empirical equivalence entails underdetermination in general. That is, inference to the best

\textsuperscript{110} As noted in chapter two, I am assuming that S knows that CS and SA are incompatible. So, the relevant premises of Underdetermination-\textit{E} should be understood to include the assumption that S knows that CS and SA are incompatible.

\textsuperscript{111} Though this is typically how the Explanationist Response is understood, some think that it may also provide other avenues for attacking the skeptic’s argument. For instance, Vogel (Manuscript) seems to think that the Explanationist Response may provide grounds for thinking that CS and SA are not empirically equivalent, in other words the Explanationist Response may provide an argument for the claim that UE-2 is false.
explanation makes it true that two hypotheses can be empirically equivalent and yet one hypothesis can be better supported by the evidence than the other. This can occur when one hypothesis is a better explanation of the evidence than the other. Recall from above that inference to the best explanation is plausibly formulated in the following manner:

\[ F_1, F_2, \ldots, F_n \text{ are facts in need of explanation.} \]

Hypothesis \( H \) explains the \( F_i \).

No available competing hypotheses would explain the \( F_i \) as well as \( H \) does.

\[
\therefore H \text{ is true.}
\]

In order to see how inference to the best explanation provides a way of denying the entailment of underdetermination from empirical equivalence consider the following case. Two hypotheses, \( H_1 \) and \( H_2 \), are the only available competing hypotheses which explain a given set of facts: that there is an object, \( X \), that looks like a duck, walks like a duck, quacks like a duck, and is interacting with a group of ducks. \( H_1 \) is the hypothesis that \( X \) is a duck. \( H_2 \) is the hypothesis that \( X \) is a robot created by Martians to mimic the appearance and mannerisms of a duck and the Martians used their transporting technology to transport \( X \) to a spot where there are ducks. \( H_1 \) and \( H_2 \) are empirically equivalent, that is they have the same observational consequences concerning \( X \)’s appearance and mannerisms. Although \( H_1 \) and \( H_2 \) are empirically equivalent, \( H_1 \) is a better explanation of the facts than \( H_2 \) because it is the more virtuous explanation. Intuitively, \( H_1 \) is a simpler explanation because it does not appeal to Martians and strange transporter technology. Also, \( H_1 \) is a better
explanation because \( H_2 \) raises a number of unanswered questions, which \( H_1 \) does not, questions such as: how did the Martians construct \( X \)? Why did they construct \( X \)? Why did the Martians send \( X \) to earth? How does their transporting technology function? And so on. According to inference to the best explanation, the fact that \( H_1 \) is a better explanation of the facts gives us evidence of its truth, evidence which we do not have in support of \( H_2 \). Thus, the explanatory considerations provide additional evidence beyond the evidence provided by observing the observational consequences of the two hypotheses. So, in this case the available evidence (evidence from the facts observed and evidence from explanatory considerations) favors \( H_1 \) over \( H_2 \). This means that although \( H_1 \) and \( H_2 \) are empirically equivalent, they are not underdetermined. Therefore, the general principle is false. Empirical equivalence does not entail underdetermination.

Since it is clear how inference to the best explanation provides a way of denying that empirical equivalence entails underdetermination, it is fairly easy to see how the Explanationist Response shows that UE-3 is false. The Explanationist Response involves arguing that CS is the best explanation of our sensory experiences.\(^{112}\) That is to say, the Explanationist Response requires arguing that CS

\(^{112}\) Of course, this is the key point that the supporter of the Explanationist Response must establish. For now, I will simply assume that this can be done and explain how the Explanationist Response provides a satisfactory response to skepticism. In the next chapter I will argue that this assumption is correct. More precisely, I will argue that CS is the best available explanation of our sensory experiences.
is a better explanation of our sensory experiences than any of the other available explanations (the various SAs). Since CS is the best explanation of our sensory experiences, inferring to the best explanation of our sensory experiences provides us with evidence that supports CS in addition to the empirical evidence, which supports both CS and SA.\textsuperscript{113} Assuming that CS and SA are empirically equivalent, it is plausible that the empirical evidence (our having sensory experiences, which both hypotheses claim we will have) supports both hypotheses equally well. However, the evidence from explanatory considerations provides us with additional evidence in support of CS. Thus, our total evidence (empirical evidence plus explanatory evidence) favors CS over SA. Thus, even if it is granted that CS and SA are empirically equivalent, it does not follow that the evidence does not favor CS over SA. Therefore, premise UE-3 is false.

3.3.2 Criterion 2: Why We Find Skeptical Arguments Worrisme

Considering skeptical arguments can at times lead us to worry about whether we have knowledge or justification for our beliefs. While Barry Stroud (1984) overstates things a bit when he says that skepticism “appeals to something deep in our nature

\textsuperscript{113} One might think that inferring to the best explanation does not provide one with additional evidence in support of CS because one might think that only the best explanation is supported by the empirical evidence at all. That is to say, one might think that since CS is the best explanation, only it is supported by the empirical evidence. While this is a plausible way of understanding things, I am willing to grant the skeptic that both CS and SAs are supported to some degree by the empirical evidence.
and seems to raise a real problem about the human condition”, it is a fact that throughout history skeptical arguments have been found to be worrisome. An acceptable response to skepticism must have some plausible story to tell about why we often find skeptical arguments to be worrisome even though they are unsound.

There are at least two good explanations of the ability of skeptical arguments to generate this sort of worry available to supporters of the Explanationist Response. The first explanation is that although empirical equivalence does not entail underdetermination, unreflectively this can seem quite plausible. After all, one might think that if two hypotheses predict all of the same empirical claims, empirical evidence alone cannot favor one over the other. Further, one might initially think that when we are talking about two hypotheses which make claims about empirical matters (the existence/non-existence of mind independent objects, for example) the only thing that could make a difference to whether one theory is more likely to be true than another is empirical evidence. So, at least at first, one might be inclined to grant the skeptic that empirical equivalence entails underdetermination and since the skeptic’s alternatives to CS sure seem to be empirically equivalent to CS, one might think the justification for our ordinary external world beliefs is in trouble. Of course, once one considers how inference to the best explanation can provide evidence that favors a hypothesis over its empirically equivalent rivals, one can see that the initially plausible assumption that empirical equivalence entails underdetermination is false. Thus, once one has considered the Explanationist Response to skepticism, the

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114 Pg. 39
skeptical argument no longer seems worrisome. However, our initial tendency to think that empirical equivalence entails underdetermination provides a plausible explanation for why we sometimes find skeptical arguments worrisome.

The second explanation that is available to supporters of the Explanationist Response is to admit that skeptical arguments do illuminate a very important fact about our evidence. As Richard Feldman (2001) notes, skeptical arguments draw our attention to the fact that we “lack direct evidence against skeptical hypotheses”\textsuperscript{115} To fully appreciate Feldman’s point it is worth considering an example that he presents to help distinguish between direct and indirect evidence:

I say that I know that I see Smith down the hall. You ask whether it could be Jones instead. I reply that Jones is taller with different color hair, so it’s Smith not Jones…My visual evidence is direct evidence against the proposition that it is Jones that I see. In contrast, I have no direct evidence against the hypothesis that I am a brain in a vat being deceived…If that hypothesis were true, things would seem exactly as they do now.\textsuperscript{116}

As Feldman recognizes the only sort of evidence that we can have against skeptical hypotheses is in some sense indirect; it is evidence that has “to do with explanatory virtues, background evidence, and the like.”\textsuperscript{117} Quite plausibly, this is a source of worry when we are presented with skeptical arguments because it seems that we

\textsuperscript{115} Pg. 75 Feldman (1999) also makes this point.

\textsuperscript{116} Ibid. Pg. 75

\textsuperscript{117} Ibid. Pg. 75
cannot rule out the skeptic’s alternatives on the basis of our direct sensory evidence. When the skeptic draws our attention to this fact we sometimes worry that we do not have the justification for the beliefs in question that we thought.

Given that the Explanationist Response is consistent with both of these reasonable explanations for the fact that we sometimes find skeptical arguments worrisome, the Explanationist Response clearly satisfies this second criterion.

### 3.3.3 Criterion 3: How We Have Justification in Ordinary Situations

Since the Explanationist Response, if successful, makes it reasonable to think that Underdetermination-$E$ is unsound, one might be inclined to think that it does all that is required to respond to the skeptic. However, providing sufficient reasons for thinking that the skeptic’s argument is unsound would be a hollow victory if employing the Explanationist Response to refute the argument forced one to accept the skeptic’s conclusion. An adequate response to skepticism must allow for ordinary people to have justification for their beliefs in ordinary situations. That is, an adequate response to skepticism must be compatible with at least some account of how we have justification for our external world beliefs when we are not facing skeptical arguments or skeptical explanations of our sensory experiences. The Explanationist Response satisfies this criterion because it is compatible with a number of accounts of perceptual justification.

First of all, it was noted above that the Explanationist Response is not wedded to any form of Explanationism other than Weak Explanationism. However, the
Explanationist Response is of course compatible with these stronger forms and it is compatible with Explanationist accounts of perceptual justification. These accounts of justification claim that propositions about the external world are justified for us because they are part of the best explanation of our sensory experiences.\textsuperscript{118} Obviously, there is a very nice fit between the Explanationist Response to skepticism and Explanationist accounts of justification since the former involves a commitment to the claim that our commonsense view of the external world is the best explanation of our sensory experiences. So, the supporter of the Explanationist Response to skepticism can readily accept an Explanationist account of justification, which accounts for how we have justification for external world propositions in ordinary situations.

Although an Explanationist account of justification might seem to be the clear choice for the supporter of the Explanationist Response, she does not have to endorse this sort of account of justification. The supporter of the Explanationist Response might think that the response provides the tools for a cogent argument that the skeptic’s argument is unsound, but some account of justification other than an Explanationist account is correct. For example, one might think that dogmatism, the view that “whenever you have an experience as of $p$, you thereby have immediate \textit{prima facie} justification for believing $p$”, is true.\textsuperscript{119} Yet, one might think, contrary to


\textsuperscript{119} Pryor (2000) pg. 536
dogmatists, that dogmatism does not offer a good response to skepticism because it does not explain why these experiences justify as they do.\textsuperscript{120} So, one might think that even though dogmatism is true, it does not provide a dialectically satisfying response to the skeptic’s argument, but the Explanationist Response does. Thus, one might be inclined to accept the Explanationist Response as a reply to skepticism and dogmatism as an account of justification. This pairing would account for how we have justification in ordinary situations without taking away from the effectiveness of the Explanationist Response.

The considerations that demonstrate that the Explanationist Response can be successfully paired with dogmatism seem to apply \textit{mutatis mutandis} for any other account of justification, so long as that account of justification does not deny Weak Explanationism. Thus, the supporter of the Explanationist Response has numerous ways of satisfying this third criterion.

\subsection{3.3.4 Criterion 4: Retaining Justification When Facing Skeptical Challenges}

The final criterion that a successful response to skepticism must satisfy is the criterion of explaining how it is possible for us to retain our justification when presented with a skeptical challenge (a skeptical argument and/or skeptical alternatives to our beliefs). Without satisfying this criterion a proposed response to skepticism leaves us in an

\footnote{\textsuperscript{120}See Feldman and Conee (2004) for considerations along these lines.}
unenviable position, we have a response to skepticism that only succeeds when we are not faced with skeptical challenges. This is unacceptable.\textsuperscript{121}

Fortunately for supporters of the Explanationist Response, it can satisfy this criterion. To begin, assuming the Explanationist Response succeeds in providing a cogent argument for the conclusion that the skeptic’s argument is unsound, it is easy to see how those of us familiar with the Explanationist Response can retain our justification when presented with skeptical challenges. Since the skeptic’s argument is unsound, the best that he can hope for is to provide someone with a misleading defeater, and thus, rob her of her justification.\textsuperscript{122} However, those who are acquainted with the Explanationist Response are aware of the fact that the skeptic’s argument is unsound. When one is aware that the skeptic’s argument is unsound, it is a simple matter to retain one’s justification. If one is aware that the skeptic’s argument is unsound, the skeptic does not provide one with reasons to accept his conclusion. Thus, the skeptic does not provide one with reasons that defeat one’s justification. So, the Explanationist Response satisfies the fourth criterion with respect to those who understand the response.

\textsuperscript{121} Many would claim that this is exactly what contextualism does and for that reason contextualism is unacceptable. I will not go into the virtues and vices of embracing contextualism here. The interested reader is encouraged to see Conee (2005) and Feldman (1999), (2001).

\textsuperscript{122} By ‘rob her of her justification’ I mean make it so that the person’s total evidence no longer propositionally justifies the belief(s) in question.
Although it is important to point out how the Explanationist Response can satisfy the criterion with respect to those who are aware of the response, many will think that a successful response to skepticism should also accomplish the more difficult task of explaining how an ordinary person, who does not know of the Explanationist Response, can still have propositional justification for her external world beliefs when faced with skeptical challenges. There are two things to be said with respect to this more difficult task. First, even if the Explanationist Response failed to explain how ordinary people can retain their justification when facing skeptical challenges, it is still progress in responding to skepticism to explain how those familiar with the Explanationist Response can retain justification when facing the skeptic. Second, there are ways of explaining how ordinary people retain their justification, at least sometimes, when facing the skeptic that are available to the supporter of the Explanationist Response.\textsuperscript{123}

One way that the supporter of the Explanationist Response can explain how ordinary people retain their justification when presented with skeptical arguments is by pointing out that it seems plausible that in some sense ordinary people are aware that their commonsense view of the external world is the best available explanation.

\textsuperscript{123} I add the qualification “at least sometimes” here because I think that although the best a skeptic can do is give someone a misleading defeater, I think persuasive skeptics can sometimes be successful in this. I do not think they are usually or even often successful, but I am willing to concede that at least occasionally the skeptic is able to present someone with a misleading defeater and that person has no defeater-defeater, and thus the person lacks propositional justification for the propositions that the skeptic has attacked.
There is evidence from cognitive science that ordinary people and even small children are able to evaluate the quality of explanations. For instance, William Brewer, Clark Chinn, and Ala Samarapungavan (2000) maintain that “when one is given an explanation of a phenomenon there appears to be a natural human tendency to evaluate the quality of the explanation.”124 Additionally, Brewer, et al assert that their research “suggests that, qualitatively, children show competence with most aspects of everyday explanations at an early age.”125 Importantly, the “aspects of everyday explanations” that Brewer, et al refer to are what are typically understood as explanatory virtues, things like: consistency, scope, simplicity, etc. Further support for the idea that children are competent at evaluating explanations comes from the work of Alison Gopnik (1998), who claims that children have “powerful and flexible theory-formation abilities”, which seems to suggest they are good at coming up with their own explanations.126 There even seems to be some evidence to suggest that infants have “at least a rudimentary form of explanatory understanding.”127 Given that even small children seem to be able to evaluate the quality of explanations and the fact that there is large amounts of cross-cultural research that suggests explanations are pervasive in “our activities from the most simple and mundane…to the most sophisticated and unusual”, it seems plausible that when an ordinary person

124 Pg. 281
125 Ibid. pg. 296
126 Pg. 103
127 Keil and Wilson (2000) pg. 4
is presented with a skeptical alternative to CS she is aware that CS is the better explanation. \(^\text{128}\) That is, it is reasonable to think that Jonathan Vogel’s (1990) assessment that “the specious character of the explanations the skeptic offers is immediately apparent—they come across as contrived or unduly indirect” is correct. \(^\text{129}\) The “Aw, Come on!” reaction to skeptical arguments that Keith DeRose (1999) describes his students as having seems to be an expression of this sort of awareness. \(^\text{130}\) So, it seems that one way in which ordinary people can remain justified when presented with skeptical challenges if we accept the Explanationist Response is that they can recognize that CS is the best available explanation and so reasonably disregard the skeptic’s alternatives.

Additional ways that the supporter of the Explanationist Response can explain how ordinary people retain their justification when presented with skeptical arguments are possible as well. Accepting the Explanationist Response does not prohibit one from endorsing other responses to skepticism to explain how the ordinary person retains her justification in the face of skeptical challenges. For example, a supporter of the Explanationist Response can plausibly maintain that ordinary people retain their justification because of their employment of a Moorean style response—they are more certain that they have justification for external world

\(^{128}\) Wilson and Keil (2000) pg. 87

\(^{129}\) Pg. 666

\(^{130}\) Pgs. 3-4
beliefs than they are of the truth of any of the premises of the skeptic’s argument.\textsuperscript{131}

So, the supporter of the Explanationist Response can plausibly maintain that it demonstrates what is wrong with the skeptic’s argument while the Moorean response is what allows for ordinary people to remain justified in the face of skeptical challenges. Furthermore, it is reasonable to think that the Explanationist Response is compatible with other responses, which explain how ordinary people remain justified when presented with skeptical challenges. Thus, there seems to be many ways for the Explanationist Response to satisfy the fourth criterion.

3.4 Concluding and Looking Forward

In this chapter I have laid out four criteria, which a successful response to skepticism should satisfy. I have argued that the Explanationist Response, which says the choice between our commonsense view of the external world and skeptical alternatives is not underdetermined because the former is the best available explanation of our sensory experiences, satisfies all four of these criteria. Thus, I have explained how the Explanationist Response, if successful, works as a response to skepticism. The primary conclusion of this chapter is conditional in nature: if the Explanationist Response is correct, it offers an appealing response to skepticism.

\textsuperscript{131} See Moore (1939) for the classic presentation of the Moorean response. See Conee (2001), Lycan (2001), Pryor (2004), Silins (2007), Coliva (2008), and Willenken (Forthcoming) for contemporary discussion of this sort of response to skepticism.
I have not, aside from arguing for the above conditional conclusion, argued in this chapter that the Explanationist Response is acceptable. There are two things that must be argued for in order for the Explanationist Response to be accepted as a method of refuting skepticism. First, the Explanationist Response’s claim that our commonsense view of the external world (CS) is the best available explanation of our sensory experiences, and hence better than skeptical alternatives, must be supported. Second, the Explanationist Response must be defended from the myriad objections that have been raised against it. Given the argument of this chapter, if these two remaining tasks can be satisfactorily completed, the Explanationist Response will have been established as a successful response to skepticism.

In the two remaining chapters I will turn my attention toward completing these tasks. In the next chapter, I will argue that CS is the best available explanation of our sensory experiences. In the chapter that follows it I will defend the Explanationist Response from various objections that have been raised against it.
Chapter 4: Commonsense is the Best Explanation

4.1 Introduction

In the previous chapter I explained how the Explanationist Response can provide a satisfactory response to skepticism. In that chapter I argued that if the Explanationist Response is correct, it offers an appealing response to skepticism by satisfying all four of the criteria of an adequate response to skepticism. More precisely, I argued that if correct, the Explanationist Response can explain what is wrong with the skeptic’s argument, explain why we sometimes find skeptical arguments worrisome, allow for ordinary people to have justification for their external world beliefs in ordinary situations, and explain how we can retain our justification when faced with skeptical challenges. Although the conclusion argued for in the previous chapter is extremely important, it is only a conditional—if the Explanationist Response is correct, then it provides a satisfactory response to skepticism. Of course, the truth of this conditional does not constitute a reply to skepticism, more is required. In order to have an actual response to skepticism, reasons for thinking that the antecedent of this conditional is true are needed. Thus, my task of responding to the skeptic cannot be considered complete until I have argued that the Explanationist Response is correct. That is what I intend to do in this chapter. Specifically, I will argue in this chapter that the central claim of the Explanationist Response, that our body of commonsense beliefs about the world, beliefs that entail the existence of a world external to our minds which contains various three-dimensional objects which
causally interact with us and each other, (CS), is the best explanation of the features of our sensory experiences. In other words CS is a better explanation than skeptical alternatives (SAs) to our commonsense beliefs such as our sensory experiences are the result of the actions of a powerful demon, we are in the Matrix, and so on. The fact that CS is the best explanation coupled with my arguments concerning the Explanationist Response in the previous chapter yields an adequate response to skepticism, that is to say, they yield a cogent argument that skepticism is false and that the Explanationist Response satisfies all four of the criteria described above.

In what follows I begin with some remarks about explanations and some general considerations of what makes one explanation better than another. Additionally, I will briefly mention what it is that CS and the various SAs are supposed to explain. After these preliminary remarks I will turn to the task of demonstrating that CS is the best explanation. I will present two reasons, each individually sufficient for showing that CS is superior to its skeptical rivals, that together constitute a strong case for the claim that CS is the best explanation of our sensory experiences.

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132 I take the fact that CS is a good explanation and the fact that it is better than SAs to establish that CS is the best explanation of the features of our sensory experiences in the sense required by inference to the best explanation. The reason for this is that CS and the various SAs are the only available competing explanations of the features of our sensory experiences.
4.2 Preliminaries

4.2.1 Explanation

First, it is important to say a bit about what an explanation is. Recall from the previous chapter that often an explanation is thought to be something that provides understanding. So, when H explains F, H provides understanding of F—understanding of why F occurs, why F has the features it has, and so on. The most straightforward way to make sense of this idea is to construe explanation as providing answers to “why-questions”. In order for H to explain F, H must provide answers to why-questions concerning F—why did F occur, why is F true, why does F have the particular characteristics that it does, etc.? It is plausible that having an answer to these why-questions in many cases will involve possessing information about the causal history of F. Often it is useful to think of this sort of causal information in counterfactual terms. For example, James Woodward (2003) claims that H explains F when H provides information about F’s causal history, which takes the form of answers to “what-if-things-had-been-different” questions. According to Woodward, H explains F when it provides answers to questions about how F would have been different if the system in which F was produced were manipulated in various ways. Woodward proposes his way of construing explanation as an account

133 See for example Moser (1989), Woodward (2003), and Strevens (2000) and (2008).


135 Pg. 11
of causal explanation whereas explanation as an answer to a why-question can be understood both causally and non-causally. Although Woodward’s account of explanation is powerful and well-motivated, it is not necessary to defend it here because what follows does not assume the correctness of any particular account of explanation. The Explanationist Response is compatible with all of the most prominent accounts of explanation.\textsuperscript{136} The Explanationist Response is compatible with all of these accounts of explanation because the Explanationist Response only requires that CS is the best available explanation of the features of our sensory experiences regardless of the details of the correct account of explanation. Thus, for the task of responding to the skeptic it will not be necessary to adjudicate among competing accounts of explanation because the intuitive idea that an explanation involves answering various why-questions will be sufficient for the task at hand.

4.2.2 What Needs Explaining

Before turning to an examination of why CS is a better explanation than SAs, it is necessary to get clear on exactly what CS and SAs are supposed to explain. CS and the various SAs are attempts to explain our sensory experiences. That is, they are

\textsuperscript{136} It is compatible with the Deductive-Nomological account of explanation as put forward by Hempel and Oppenheim (1948) and Hempel (1965); unificationist accounts of explanation of the sort Kitcher (1981), (1985) defends; Salmon’s (1984), (1989) causal-mechanical account of explanation; manipulability accounts as defended by von Wright (1971), Menzies and Price (1993), and Woodward (2003); Strevens’ (2008) kairetic account of explanation; and so on.
attempts to explain why we have the sensory experiences that we do. However, it is not simply the fact that we have sensory experiences that needs explaining. As Laurence BonJour (2003) notes, “the involuntary, spontaneous character” of our sensory experiences and the fact that they “fit together and reinforce each other in a coherent fashion, presenting a relatively seamless and immensely complicated picture of an ongoing physical world” need to be explained.\(^{137}\) It is also important to recognize that it is not just that there are regularities in our sensory experiences, but also that there are regularities and coordination of sensory experiences across sensory modalities that require explaining.\(^{138}\) Take vision for example, our visual sensations do not just fit with one another coherently they also fit coherently with our tactile sensations. When you have a visual experience as of reaching out to touch an object you typically have tactile sensations of your hand meeting resistance corresponding to your visual sensation of making contact with the object. The fact that our sensory experiences from various sensory modalities fit together coherently with sensory experiences from other sensory modalities needs to be explained.\(^{139}\) Finally, the coherence of our sensory experience with our volitional activity needs to be explained. When you decide to pick up (what you take to be) a pen your visual

\(^{137}\) Pg. 85 See also BonJour (1999) and Vogel (2008b).

\(^{138}\) See Goldman (1988) for further discussion of the regularities across sensory modalities.

\(^{139}\) This is not to beg the question against the skeptic by assuming that we have different sense organs responsible for different sensory modalities. Instead, this is simply to draw attention to the fact that we have sensory experiences from various sensory modalities and that the experiences we have from these different sensory modalities fit together coherently.
experiences usually change in a regular way explicable on the hypothesis that you are voluntarily moving something in the world which you can see.\textsuperscript{140}

CS explains these facts about our sensory experiences very well. According to CS, our sensory experiences are involuntary and spontaneous because they are the result of mind-independent external objects affecting our sense organs. Our sensory experiences from various sensory modalities fit together coherently with sensory experiences from other sensory modalities because the sensory experiences of the different modalities are caused by the same external objects. In order to illustrate how CS provides explanations of our sensory experiences, it will be useful to consider a variety of examples.

To begin, consider the sensory experiences that you have when holding a billiard ball. You have visual sensations as of a spherical object as well as tactile sensations as of an object which has no corners. These sensations come to you involuntarily and spontaneously. The CS explanation of these sensations posits a three-dimensional, spherical object (the billiard ball), as well as your body, sense organs, and light. According to CS, your involuntary visual sensations are the result of looking at the billiard ball in the appropriate lighting conditions—the billiard ball causes the light to affect your eyes in a certain way. Your involuntary tactile sensations are caused by the same billiard ball being in your hand and the movement of your hand along its surface.

\textsuperscript{140} Thanks to John Bennett for pointing out the need for an explanation of the coherence of our sensory experiences with our volitional activity.
In addition to being able to account for the coherence of our sensory experiences across sensory modalities and their involuntary, spontaneous nature, CS also explains the coherence of our sensory experiences over time. Take the billiard ball example again. While holding the billiard ball in your hand, you will have a constant tactile sensation of the weight of the billiard ball throughout your examination of it. CS explains this continuing tactile sensation by positing an actual three-dimensional object in your hand, an object that has a particular size and weight. Since the same object is in your hand for the duration of your tactile sensations, CS explains why you have a tactile sensation that is the same throughout your examination of the billiard ball.

Furthermore, CS explains situations in which our sensory experiences rapidly change and why these changes are part of a coherent picture of the world. One common case of rapidly changing sensory experiences occurs when you dive into a swimming pool. Before diving in the swimming pool your visual experiences are fairly precise, objects visually appear to have well-defined edges; your auditory sensations are clear, it is possible to distinguish sounds without much difficulty; and you do not really notice much, if any, pressure along the surface of your skin. This can all change rather quickly. One moment you will have sensory experiences of this sort, and then the next moment you will have visual experiences that are less precise, objects will appear blurry; your auditory sensations will be muffled, it will be hard to distinguish sounds; and you will notice a pressure all along the surface of your skin. Though the pre-diving sensory experiences cohere with one another and the post-
diving experiences cohere with one another, the two sets of experiences are very different from one another. CS renders these two disparate sets of sensory experiences coherent. According to CS, the reason that your sensory experiences change in this drastic manner is that at first you are standing in the open air and then you have dived into a swimming pool. This change in environment results in drastic changes to your sensory experiences whether you want it to or not because light travels differently through water than it does through air, sound waves travel differently through water than they do through air, and water exerts more pressure on objects than air does.

Finally, CS also explains situations in which our sensory experiences change even more rapidly than the previous example and why these changes are part of a coherent picture of the world. That is, CS explains how we can have one set of coherent sensory experiences at one moment and then a different coherent set at the next moment. Fortunately, these sorts of situations are not all that common, but they do occur. For example, consider a case in which you are knocked unconscious. At $t_1$ you are having sensory experiences of standing on the quad on a sunny day admiring an oak tree. At $t_2$ you find yourself with very different sensory experiences. You have tactile sensations of lying on a bed, visual sensations of being in a room with a man in a white coat, and a slight throbbing pain in the back of your head. CS explains this abrupt change in your sensory experiences by positing that at $t_1$ you were standing on the quad where you were looking at an oak tree. While admiring the oak tree you were struck in the back of the head by some external object and
rendered unconscious. While unconscious you were taken to a hospital and placed in a bed. When you regained consciousness at \( t_2 \) your tactile sensations are explained by the fact that you are lying in a bed, the visual sensations are explained by the fact that the room is lit and a doctor has come to see you, and the slight throbbing pain in the back of your head is explained by your having an external body which was damaged somewhat by being struck by the object which rendered you unconscious. Thus, CS and the external objects that it posits explain quite well how these experiences, which might initially seem quite disparate, are coherent.\(^{141}\)

Although CS explains the features of our sensory experiences well, the mere fact that CS is a good explanation of the features of our sensory experiences is not enough for the Explanationist Response to be correct. It must also be the case that CS is the best explanation of the features of our sensory experiences, and thus, a better explanation than the various SAs. I will now turn to explaining why CS is the best explanation.

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\(^{141}\) Of course, CS does not render all sequences of sensory experiences coherent. According to CS we sometimes experience illusions, dreams, hallucinations, and so on, which involve sensory experiences that are not always coherent. Furthermore, it is worth noting that CS also does not hold that all coherent sequences of sensory experiences are the result of our interaction with external objects. That is to say, it is consistent with CS that we sometimes have non-veridical, coherent sequences of sensory experiences such as when we have certain dreams.
4.3 Why CS is the Best Explanation

4.3.1 Reductio

One reason for thinking that CS is a better explanation than SAs comes from a recent argument put forward by Jonathan Vogel (2008). Vogel’s argument is a reductio ad absurdum of the claim that a SA can be as good of an explanation of our sensory experiences as CS. Vogel first notes that there are multiple versions of CS because our set of ordinary beliefs about the world can vary. Afterward, he presents an example of an art historian studying a piece of art. At t₁ the best explanation of the features of the piece that the historian can devise is that it was painted by two different painters. At t₁ the historian’s set of ordinary beliefs about the world (CS₁) contains the belief “this piece was painted by two people”. However, at t₂ after reconsidering the information available to him, the historian realizes that a better

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142 This argument also works as a reductio of the claim that a SA is a better explanation of our sensory experiences than CS.

143 Vogel (2008b) details this example and his reductio on pg. 544. The formulation of Vogel’s argument offered below is slightly different from his presentation in the text. The most noticeable difference is that the contradiction derived in the formulation below is in terms of explanation whereas the contradiction that Vogel derives in his presentation of the argument is in terms of what is justified for the historian to believe. Although the arguments are slightly different, if the argument that Vogel presents succeeds, so does the formulation below. Since the argument that I present is a version of Vogel’s argument, I refer to it as Vogel’s argument in the text even though it is not the exact argument that he presents.
explanation of the data is that the piece painted by a single person over a long period of time. Now, the belief “the piece was painted by a single person” replaces the belief that it was painted by two people. So, the historian has a different set of ordinary beliefs (CS₂) at t₂.

Now that Vogel’s example has been explained here is a formulation of the reductio of the claim that a SA is as good of an explanation as CS that is based on his example:

1) CS₂ and a SA are equally good explanations of the historian’s evidence.
   (Assumed for reductio)
2) CS₂ is a better explanation of the historian’s evidence than CS₁. (Stipulated in the example)
3) If (1) and (2), then SA is a better explanation of the historian’s evidence than CS₁. (premise)
4) SA is a better explanation of the historian’s evidence than CS₁. (Sub-conclusion)
5) It is not the case that SA is a better explanation of the historian’s evidence than CS₁. (premise)
6) Therefore, it is not the case that CS₂ and a SA are equally good explanations of the historian’s evidence.

It is important to note that if Vogel’s argument is sound, it seems to provide support for the general claim of the Explanationist Response that CS is a better explanation than SAs. The reason is that the historian example is analogous to our
situation with respect to our current sensory experiences. Thus, it is plausible that one can construct this sort of argument for any particular instance of our sensory experiences by considering versions of CS that are identical except for a single empirical belief. However, before concluding that Vogel’s argument provides a solid reason to believe that CS is a better explanation of our sensory experiences than SAs the argument must be closely examined.

There are only two premises in this argument, premises 3 and 5 of the above formulation. To begin, premise 3 is supported by the extremely plausible assumption that when $H_1$ and $H_2$ are, all things considered, equally good explanations of $F$, any explanation of $F$ that is not as good as $H_1$ will also be inferior to $H_2$. Premise 5 is simply the intuitively plausible claim that in Vogel’s example the historian’s evidence is not better explained by some version of external world skepticism that it is by $CS_1$. Even if skepticism is true, skeptics usually do not think that skeptical hypotheses, that we are brains-in-vats, say, are better explanations of our sensory experiences than our commonsense beliefs. Instead, skeptics tend to claim that CS and SAs are underdetermined for us, and this only commits them to the weaker claim that CS and SAs are equally good explanations.

As might be expected there are a couple ways in which the skeptic might attempt to respond to this argument. Since the argument is clearly valid, the skeptic’s options are constrained to providing reasons for doubting one or the other of the argument’s premises. It will be worth considering how the skeptic might object to each of the premises mentioned above. First, there is premise 3, which says “If $(CS_2$
and a particular SA are equally good explanations of the historian’s evidence) and (CS₂ is a better explanation of the historian’s evidence than CS₁), then SA is a better explanation of the historian’s evidence than CS₁”. This premise is intuitively very plausible. If H₁ and H₂ equally good explanations of F, all things considered, then it seems that any explanation of F which all things considered is not as good of an explanation of F as H₁ will also be, all things considered, not as good of an explanation of F as H₂. Denying this is very counterintuitive. Thus, the skeptic would be ill-advised to attempt to respond to the argument above by denying premise 3.

Second, there is premise 5, “It is not the case that SA is a better explanation of the historian’s evidence than CS₁”. The skeptic may claim that a SA is in fact a better explanation of the historian’s evidence than CS₁. The skeptic may point out that the only kind of skeptical alternative that can plausibly be assumed to be an equally good explanation of the historian’s evidence as CS₂ is what Jonathan Vogel terms an “improved skeptical hypothesis” (ISH). There are two primary constraints on an ISH. First, it “should invoke items corresponding to the elements” of CS. Second, an ISH “should also posit, as holding of these items, a pattern of properties, relations, and explanatory generalizations mirroring” CS’s. Essentially the formula for generating an ISH is “to extract the explanatory skeleton or core from [CS]—that there are some entities bearing some properties that are related in ways exactly

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144 Vogel (1990) pg. 660 Also see Vogel (2005), (Forthcoming), and (Manuscript) for similar descriptions of ISHs.
analogous to those specified by [CS]—and then to add that the entities and their properties are somehow different from the ones mentioned in [CS].”145 So, the assumption made for reductio should be understood in terms of an ISH that has an explanatory structure which is isomorphic to CS₂. The skeptic might plausibly claim that given the fact that the ISH is isomorphic to CS₂ and CS₂ is relevantly different than CS₁, the ISH is also different than CS₁. Since the ISH is isomorphic to CS₂, it is not implausible to think that the ISH is different from CS₁ in the same way as CS₂, that is to say, in the same way that makes CS₂ a better explanation than CS₁. The skeptic might attempt to explain away our tendency to accept premise 5 by claiming that the reason we are inclined to think this premise is true is that we are inclined to assume that either the skeptical alternative at issue is a minimal skeptical hypothesis, which is clearly not a better explanation than CS₁ but is also clearly not as good of an explanation as CS₂, or the skeptical alternative is an ISH that is isomorphic to CS₁ instead of one that is isomorphic to CS₂. However, the skeptic may maintain that once we recognize that the relevant skeptical alternative is an ISH that is isomorphic to CS₂ we can see that it is not unreasonable to think that the ISH is a better explanation than CS₁. Thus, the skeptic may plausibly argue that premise 5 is unacceptable.

Admittedly, the way of denying premise 5 available to the skeptic is not obviously mistaken. In fact, at first glance this response may even seem plausible. Initial appearances notwithstanding, this response is mistaken. The mistake in this

145 Vogel (1990) pg. 661 In this quote I have replaced “the RWH” (real world hypothesis) with “CS”.
response is that it equates structural isomorphism with explanatory merit. That is, this response assumes that if two explanations are structurally isomorphic, they are explanatorily on a par. This assumption is false. To see this, compare CS₁ and an isomorphic hypothesis, MAGIC. CS₁ explains the art historian’s evidence by positing that at t₁ Painter₁ painted part of the piece and at t₂ Painter₂ painted the rest of the piece. MAGIC explains the art historian’s evidence by positing that at t₁ Painter₁ painted part of the piece and at t₂ a Leprechaun painted the rest of the piece. Although these two explanations are isomorphic, intuitively they are not equally good explanations of the art historian’s evidence. There is good evidence that Leprechaun’s do not exist, or at the very least no evidence that they do. Further, there is good evidence that painters exist and that there have been instances where multiple painters worked on the same project. This background evidence provides reason to think that CS₁ is a better explanation than MAGIC despite the fact that they are structurally isomorphic. In general structural features do not by themselves determine the quality of an explanation—the content of an explanation makes a difference to its explanatory quality too. Even though two explanations are structurally isomorphic one explanation may be superior because its content is simpler or better supported by background evidence.¹⁴⁶ So, the fact that two explanations are structurally isomorphic does not entail that they are equally good explanations.

¹⁴⁶ More will be said about various ways in which structurally isomorphic explanations can be better explanations than one another below.
Since the fact that two explanations are structurally isomorphic does not entail that they are equally good explanations, the fact that CS$_2$ and ISH are structurally isomorphic does not by itself entail that they are equally good explanations. Given that the structural isomorphism of CS$_2$ and ISH does not entail that they are equally good explanations, the fact that ISH is structurally isomorphic to CS$_2$ does not entail that ISH is a better explanation than CS$_1$. Thus, it does not seem that the skeptic’s objection to premise 5 is acceptable as it stands. In order to make this objection work the skeptic needs to do more than argue that ISH is isomorphic to an explanation that is superior to CS$_1$, he needs to either provide an argument for thinking that the structural differences between CS$_1$ and ISH themselves make ISH a superior explanation or an argument for thinking that there is something about the way the structure of ISH is filled in that makes it a better explanation than CS$_1$. It is reasonable to think that neither of these arguments will be forthcoming because, as will be made clear below, there is good reason to think that ISHs are explanatorily inferior to CS explanations despite the fact that they are isomorphic. In the next section I will argue that CS explanations are superior to ISHs with respect to a number of explanatory virtues and that explanatory virtues which are often thought to favor ISHs over CS explanations do not do so. In light of this, it seems the skeptic’s objection to premise 5 fails. Thus, it is reasonable to think that Vogel’s argument provides a good reason to think that CS is the best explanation of our sensory experiences.
4.3.2 Explanatory Virtues

A second reason for thinking that CS is a better explanation than its skeptical rivals is that CS is a more virtuous explanation of the features of our sensory experiences than ISHs. That is to say, overall CS is superior to ISHs with respect to the possession of explanatory virtues.\(^{147}\) A large number of explanatory virtues have been put forward in the literature on explanation.\(^ {148}\) Of the many explanatory virtues that have been discussed in the literature, the following seem to be especially relevant to the comparative evaluation of CS and ISHs:

\(^{147}\) I refer to ISHs here as opposed to simply SAs because as Jonathan Vogel (1990), (2005), (Forthcoming), and (Manuscript) aptly notes the only skeptical rivals that can hope to offer an explanation of our sensory experiences that rivals CS are ISHs. Non-improved skeptical alternatives, SAs, seem hopelessly impoverished. They simply tell us that our sensory experiences are caused by a demon or by our brains being stimulated by a supercomputer, etc., but they do not tell us how the demon or the supercomputer goes about producing these experiences or how the objects of our experiences are related or why they behave as they do. SAs cannot match the explanatory power of CS. Since they cannot match the explanatory power of CS in the sense of explaining the features of our sensory experiences, there is no need to consider the explanatory virtues of the various SAs because CS is clearly preferable on the grounds that it actually explains what requires explaining whereas the SAs do not. Given that SAs do not have anywhere near the explanatory power of CS, it is plausible that the only kind of skeptical alternative that has any hope of matching CS is an ISH.

\(^{148}\) See Beebe (2009) for a fairly comprehensive list of explanatory virtues. Also, see Quine and Ullian (1978), Thagard (1978), Lycan (1988), and Vogel (1990) for discussion of various explanatory virtues.
1) **Quantitative Parsimony**: All else being equal, an explanation that posits fewer individual entities is preferable to an explanation that posits more.

2) **Qualitative Parsimony**: All else being equal, an explanation that posits fewer kinds of entities is preferable to an explanation that posits more.

3) **Explanatory Simplicity**: All else being equal, an explanation that posits fewer fundamental explanatory regularities is preferable to an explanation that posits more.

4) **Explanatory Questions**: All else being equal, an explanation that raises fewer unanswerable explanatory questions is preferable to an explanation that raises more.

5) **Conservatism**: All else being equal, an explanation that fits better with background information or prompts fewer revisions to one’s overall set of beliefs is preferable to an explanation that fits less well or prompts more revisions.

It will be helpful to consider a particular ISH when comparing how CS and ISHs fare with respect to these explanatory virtues. One skeptical hypothesis that is often thought to be superior to CS at least in terms of parsimony is the familiar

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149 One might worry why we should think that a comparison of these explanatory virtues will make CS more acceptable than ISHs because one might question whether these explanatory virtues are connected to the truth. I will set aside this worry for now, but I will return to it in the succeeding chapter.
skeptical alternative, Descartes’ Demon Hypothesis.\textsuperscript{150} So for the present discussion the focus will be a comparison of CS and an improved version of Descartes’ Demon Hypothesis (DH*), the conclusions drawn about DH* will generalize to other ISHs. Recall from above that ISHs are skeptical hypotheses that are structurally isomorphic to CS. So, DH* will “invoke items corresponding to the elements” of CS and it will “posit, as holding of these items, a pattern of properties, relations, and explanatory generalizations mirroring” CS’s.\textsuperscript{151} For example, while CS posits a number of external objects (computer monitor, lamp, speakers, keyboard, etc.) and causal relations between them and my sense organs in order to explain my current sensory experiences of looking at a computer screen with a lamp on while listening to music and typing on a keyboard, DH* posits entities corresponding to the various external objects of CS and relations holding between those entities which mirror the causal relations of CS in order to account for my current sensory experiences. In what follows I will explore how CS and DH* compare to one another in terms of each of the explanatory virtues mentioned above.

\textsuperscript{150} Another skeptical hypothesis that is clearly superior on the grounds of quantitative parsimony is the hypothesis that only posits the existence of the experiencing mind, sensory experiences, and nothing else because it asserts that our sensory experiences are the result of chance. I will discuss this “chance hypothesis” below.

\textsuperscript{151} Vogel (1990) pg. 660 Also see Vogel (2005), (2008), (Forthcoming), and (Manuscript) for similar descriptions of ISHs.
4.3.2.1 Quantitative Parsimony

The first explanatory virtue to consider is quantitative parsimony. According to this virtue, all other things being equal, an explanation that posits fewer individual entities is better than an explanation that posits more. At first glance it may seem pretty clear that DH* fares better than CS with respect to quantitative parsimony. After all, the only entity in addition to the experiencing mind and the experiences of that mind that DH* posits is the demon, whereas CS posits a host of other entities: animals, tables, chairs, trees, and so on.

Though at first it may seem that DH* posits fewer individual entities, further inspection reveals that it is far from clear whether DH* or CS posits fewer individual entities. For every element of CS, DH* posits a corresponding item because it is isomorphic to CS. It is reasonable to think that these items of DH* are individual entities, after all they have “a pattern of properties, relations, and explanatory generalizations” which mirror those of the individual entities of CS.152 If these items of DH* are individual entities, then there is reason to think that DH* posits at least as many individual entities as CS. Further, consider a situation where you are looking at a computer screen and blink several times during a significant viewing time. You will have many very similar visual experiences as of a computer screen. Part of the CS explanation of your visual experiences is that you are interacting with the same object, the computer screen, over a period of time. However, it is plausible that DH* will need to posit a number of entities—a different mental state of the demon for each

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152 Vogel (1990) pg. 660
visual experience you have of the computer screen—to do the explanatory work that the computer screen does in CS. This result will generalize to any case where you have distinct episodes of sensory experiences that CS can plausibly explain by appealing to your interacting with one object at different times. Thus, CS might be thought to be more quantitatively parsimonious than DH*.

Now, one might be inclined to object that the items of DH* should not be considered individual entities. In support of this it might be claimed that the items of DH* are plausibly features of the demon’s mind, and thus, are not themselves individual entities. So, one might maintain that DH* does not posit as many individual entities as CS.

Although this way of responding on behalf of DH* might seem plausible, without a well-motivated account of how entities are to be counted this objection is unpersuasive. Without such an account it is not clear why one should think that the items of DH* are not individual entities. In fact there is some reason for thinking that they are individual entities. Presumably, these items are individual mental states of the demon or at least distinct features of some mental state or other of the demon. If these items are individual mental states of the demon, then it is clear that they are individual entities just like our individual mental states are individual entities. If these items are distinct features of mental states of the demon, then it still seems that they are individual entities. The reason that they still seem to be individual entities is because they are capable of having properties, relations, and providing explanatory generalizations that mirror the properties, relations, and explanatory generalizations
that are had by individual entities. Thus, it seems that claiming that the relevant items of DH* are features of the demon’s mind is not sufficient for showing that they are not individual entities.

Although it is not unreasonable to think that CS posits fewer individual entities than DH*, without a well-motivated account of how entities are to be counted it would be a mistake to conclude that either CS or DH* is more quantitatively parsimonious than the other. So, until such an account is established it is reasonable to hold that neither CS nor DH* is clearly superior with respect to quantitative parsimony.

4.3.2.2 Qualitative Parsimony

The next explanatory virtue to consider is qualitative parsimony, which concerns the number of kinds of entities posited by an explanation. This is another area in which it is often hastily concluded that skeptical hypotheses such as DH* fare better than CS. DH* posits minds, experiences, and causal regularities whereas CS posits minds, experiences, causal regularities, and material objects. So, one might conclude that DH* is more qualitatively parsimonious than CS.

Although it seems correct that CS posits these various kinds of entities, it is not clear that DH* posits fewer kinds. After all, DH* posits our minds (or at least the mind of the deceived), our experiences, causal regularities, as well as the demon itself. Even if it is assumed that the demon is only a mental substance, a mind, it is not clear that the demon is of the same kind as our minds. The demon is vastly more
powerful than our minds. It is able to cause us to have sensory experiences whether we want to have the experience or not. It is capable of maintaining extraordinary coherence among the sensory experiences that it gives us from one moment to the next. And so on. Thus, it is reasonable to think that whatever the demon is, it constitutes another kind of thing than our minds.

Now one might respond by conceding that it is plausible that DH* posits these different kinds of entities while maintaining that it still fares better than CS with respect to qualitative parsimony. First, one might think that the kinds of things posited by DH* are more similar to one another than those posited by CS. It might be thought that if the demon is itself a mental substance, it is of a kind that is more similar to our minds than material objects are. So, one might think that DH* is more qualitatively parsimonious than CS because the kinds of things posited by CS are more disparate than the kinds posited by DH*. Second, one might think it is a mistake to believe that CS only posits: minds, experiences, causal regularities, and material objects. One might argue that CS posits a whole host of kinds of material objects: dogs, cats, trees, stars, and so on. So, one might conclude that CS posits many more kinds of entities than DH*. Thus, one might think that either of these two reasons provides good grounds for thinking that DH* is more qualitatively parsimonious than CS.

Both of these considerations in favor of DH* bring to light the fact that there are a number of counting problems concerning qualitative parsimony. First, it is not clear whether the appropriate way to determine qualitative parsimony is some
measure of the similarity between the kinds of things posited by a hypothesis or a count of the number of distinct kinds of things posited. Second, if the proper way to determine qualitative parsimony is some measure of similarity among kinds, there still remains the problem of spelling out what that measure is. It seems plausible that on some ways of understanding this measure of similarity material objects will count as more similar to our minds than the demon will. On other ways of understanding the similarity of kinds the demon will be more similar to our minds than material objects. So, without reason to think that a particular way of measuring the similarity of kinds of entities is correct it is unclear whether DH* or CS fares better. Third, if the proper way to determine qualitative parsimony is to simply count kinds, there remains a problem of how to count kinds. On some ways of counting kinds of entities DH* has fewer than CS, perhaps because there are numerous kinds of material objects posited by CS. On other ways, such as when the demon itself counts as a distinct kind of entity, the two explanations posit the same number of kinds. On yet other ways of counting kinds of entities, CS posits fewer kinds of entities than DH*. For example, if the demon counts as a distinct kind of entity and its mental states count as different in kind from the mental states we possess, then DH* may posit more kinds of entities than CS. Thus, without some reasonable account of how kinds of entities should be counted it is not clear whether one of these explanations of our sensory experiences is more qualitatively parsimonious than the other. Therefore, there does not seem to be good reason to think that DH* is more qualitatively parsimonious than CS or vice versa.
4.3.2.3 Explanatory Simplicity

The next explanatory virtue is one with respect to which it is reasonable to think that CS is clearly superior to its skeptical rivals. Explanatory simplicity concerns the number of fundamental explanatory regularities posited by an explanation. Typically, the way that CS is shown to be superior to DH* with respect to explanatory simplicity is by appealing to necessary truths of geometry and various spatial properties. These necessary truths do explanatory work in CS explanations that DH* can match only by positing additional contingent regularities.

The fact that CS is explanatorily simpler than DH* can be illustrated by an example that involves three houses $a$, $b$, and $c$ arranged in a triangular pattern. If CS is true, these houses actually occupy locations that are arranged in a triangular pattern. Given CS, the triangle inequality theorem, a necessary truth which states that the sum of the lengths of any two sides of a triangle is greater than the length of the remaining side, can help explain why when you have sensations of moving at the same speed your sensation of walking lasts longer when you have the sensation of walking from $a$ to $b$ to $c$ than when you have the sensation of walking directly from $a$

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153 See BonJour (1999), (2003), Hasan (Manuscript), and Vogel (1990), (2005), (2008), (Forthcoming) for arguments of this sort.

154 If one worries that appealing to houses unfairly disadvantages the skeptic, the example can also be understood in terms of appearances that we typically take to be houses that are arranged in a triangular pattern. For simplicity of prose I will simply refer to $a$, $b$, and $c$ as “houses”.

155 This example is drawn from Vogel (2008) pgs. 547-548.
to $c$. Part of the explanation CS provides for the fact that your sensations of walking differ in duration is that, according to the triangle inequality theorem, the distance from $a$ to $b$ to $c$ must be greater than the distance from $a$ directly to $c$.

In order for DH* to match the explanation provided by CS in this case it must posit some additional fundamental regularity. The reason for this is that the counterparts of $a$, $b$, and $c$ in DH*, $a^*$, $b^*$, and $c^*$, will not have genuine locations because they are patterns in the demon’s mind. Since $a^*$, $b^*$, and $c^*$ do not have genuine locations, the triangle inequality theorem does not entail that the distance from $a^*$ to $b^*$ to $c^*$ is greater than the distance from $a^*$ directly to $c^*$. So, in order for DH* to provide an explanation of the differing duration of sensations when you seem to take different routes between the houses it must posit some contingent empirical regularity that governs the relations between $a^*$, $b^*$, and $c^*$ in a way that is similar to the triangle inequality theorem. This additional empirical regularity in DH* does not have a counterpart in CS. Thus, DH* will have to posit contingent explanatory regularities that CS does not in order to explain the same facts. Since both CS and DH* will have to posit the set of necessary truths and DH* has to posit additional contingent regularities, CS fares better with respect to the virtue of explanatory simplicity than DH*.

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156 It is worth noting that the triangle inequality theorem is normally regarded as axiomatic for Euclidean and many non-Euclidean geometries. In fact, the triangle inequality theorem will hold for any geometry that has a well-defined distance function, i.e. any geometry that is a metric space.
Now, one might object that DH* does not have to posit an additional fundamental regularity because the sensations we have may be the result of the demon’s implementing a plan that includes a virtual space. This virtual space could be a mathematical representation of an imaginary space, in which case, the triangle inequality theorem would entail that the distance from $a^*$ to $b^*$ to $c^*$ is greater than the distance from $a^*$ directly to $c^*$. The reason for this is that the virtual space of DH* will have the same mathematical properties as the space of CS. So, the triangle inequality theorem and other necessary truths of geometry do the same explanatory work in DH* explanations as they do in the corresponding CS explanations.

Although this objection is initially plausible, it ultimately fails. It is true that the triangle inequality theorem and other necessary truths of geometry entail things about the virtual space of DH*, and so, these necessary truths can do explanatory work in DH*. However, DH* will still need to posit fundamental regularities that CS does not. DH* will need to posit a fundamental regularity that the demon implement a plan that includes such a virtual space. Without this regularity there would be no guarantee that the distances between $a^*$, $b^*$, and $c^*$ are governed by the triangle inequality theorem because it is possible that they are not arranged spatially at all since they are mental states or features of mental states of the demon. The choice of what plan the demon implements seems to be contingent. So, DH* needs to posit an additional fundamental regularity that CS does not.

Of course, the skeptic might respond that it is a necessary truth that the only way the demon can cause our sensations is through the implementation of such a
virtual space. This would seem to eliminate the need for DH* to posit a fundamental regularity over and above those posited by CS. However, while we have good reason to accept that various truths of geometry are necessary truths, we have proofs for them; there seems to be no good reason to accept this purported necessary truth about the demon’s causal powers. Without good reason to accept that this is a necessary truth about the demon’s causal powers it is reasonable to conclude that DH* must posit more fundamental regularities than CS. Thus, it is reasonable to conclude that CS is explanatorily simpler than DH*.

4.3.2.4 Explanatory Questions

Raising fewer unanswerable explanatory questions is another virtue with respect to which CS is superior to DH*. Even if we grant that CS and DH* explain all of the same facts, DH* will raise more unanswerable explanatory questions than CS.157 William Lycan (1988) argues that skeptical hypotheses prompt such questions as:

“Who is thus manipulating my mind? For what possible reason? Why and how did that person choose to produce in me just the particular sequence of experiences (as of my entire life to date, just exactly as it happens to have run) that he or she did? And so on and so forth.”158

Although the questions that Lycan mentions seem to presuppose some manipulating agent such as the Demon in DH*, similar unanswerable explanatory questions arise.

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158 Pgs. 189-190
from other ISHs. For example, questions such as: How does the supercomputer function? What is its power source? How did my brain get in a vat? Has it always been in a vat? What sorts of nutrients are used to keep my invatted brain alive? all arise from the brain-in-a-vat skeptical hypothesis. These are all explanatory questions that we seem to not be in any position to answer or fruitfully go about trying to answer, if the brain-in-a-vat skeptical hypothesis is true. Any skeptical hypothesis will be plagued with a number of these sorts of questions; questions which are not raised by CS. Thus, even if we assume CS and DH* both explain the relevant features of our sensory experiences, CS has an advantage over DH* with regard to the explanatory virtue of raising fewer unanswerable explanatory questions.

Now, one might admit that DH* raises unanswerable questions like those described above, but doubt that this shows that CS is better when it comes to unanswerable explanatory questions. As Jonathan Vogel (1990) claims, “it is not at all clear that [CS] does any better in the face of analogous demands.” According to Vogel, both CS and DH* “invoke ultimate regularities that are not themselves explained, and neither can account for the existence of the world as such.” He goes on to claim that since CS and DH* have the same structure “anywhere CS can explain a lower-level phenomenon by a higher-level regularity”, DH* can too. Thus,

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159 Pg. 662 I have replaced “RWH” with “CS” in this quote.

160 Ibid. pg. 662

161 Ibid. pg. 662 I have replaced “RWH” with “CS” in this quote.
Vogel concludes that DH* will only face a problem of raising unanswerable explanatory questions to the extent that CS will. Admittedly, CS does raise some unanswerable explanatory questions. Vogel is clearly correct when he says that CS appeals to unexplained regularities such as fundamental laws of nature and that it does not offer an account of “the existence of the world as such”. Additionally, it is true that CS and DH* are on the same footing when it comes to explaining lower-level phenomena in terms of higher-level regularities because of their isomorphic structures. Nonetheless, Vogel is mistaken when he concludes from these facts that CS is no better off than DH* when it comes to raising unanswerable explanatory questions. DH* raises the same unanswerable questions as CS as well as a host of others such as those listed above. The unanswerable explanatory questions that DH* raises over and above those that it shares with CS are not the result of the structure of DH*, nor are they questions of explaining lower-level phenomena in terms of higher-level generalizations. The unanswerable explanatory questions that DH* raises for which there are not analogous unanswerable explanatory questions raised by CS are questions that stem from the additions that DH* tacks on to the explanatory structure it shares with CS. DH* makes claims about a demon that is bent on deception (other ISHs make claims about brains-in-vats and supercomputers, systems running a Matrix program, and so on). This aspect of DH* gives rise to a slew of unanswerable questions. So, although CS and DH* have isomorphic structures and they share some unanswerable explanatory questions, DH* has unanswerable questions over and above those that are
prompted by CS. CS, therefore, is better than DH* when it comes to raising unanswerable explanatory questions.

4.3.2.5 Conservatism

The final explanatory virtue by which to compare CS and DH* is conservatism. According to the virtue of conservatism, one explanation is better than another, all things being equal, when the former fits better with background information or prompts fewer revisions to one’s overall set of beliefs than the latter. One might be inclined to point out that CS is more conservative than DH* for the obvious reason that very few of us are practicing skeptics. CS is a part of our overall set of beliefs already, so it prompts no revisions to our overall set of belief while DH* would prompt major revisions—replacing all of CS.

Even if the fact that CS is part of our overall set of beliefs is true, which it seems to be, when evaluating how conservative an explanation is it seems to trivialize the explanatory virtue of conservatism if one of the explanations being considered is taken to be part of the overall set of beliefs relevant for determining which explanation is more conservative. Since the more conservative explanation is the one that requires the least change in our set of already held beliefs, it seems fairly obvious that if we include the beliefs in CS in that set, CS will be more conservative because replacing CS with DH* would require changing all of the beliefs that constitute CS. The same consideration applies mutatis mutandis with respect to comparing CS and DH* when the beliefs of DH* are counted in the set of already held beliefs. Thus,
pointing out that CS is more conservative than DH* in this way does not help to show that CS is a better explanation.

Although it does not help to point out that CS is more conservative than DH* when we take CS to be part of our overall set of beliefs, it is still reasonable to think that CS is more conservative than DH* even when we do not include CS in the overall set of beliefs considered. Of course, one cannot show that CS is more conservative than DH* by pointing to beliefs that are contained in CS such as “I am currently looking at a computer screen”, “I am sitting in a fairly uncomfortable chair”, and so on. However, there are a large number of beliefs that we have which are not perceptual beliefs, but which fit better with CS than DH*. For example, I believe that George Washington was the first president of the United States; I believe that Roderick Chisholm was perhaps the greatest epistemologist of the last century; I believe that my sister has two dogs, which I have not seen; and so on. All of these beliefs fit with CS, but not with DH*. So, if CS is the correct explanation of the features of our sensory experiences and I come to be aware of this, this set of beliefs will require no revision. If DH* is the correct explanation of the features of our sensory experiences and I come to be aware of this, this set of beliefs should be revised. If DH* is true, then there is no United States for George Washington to be president of and likely there was no George Washington. If DH* is true, then the writings that support thinking that Roderick Chisholm was the greatest epistemologist of the last century do not exist because if Chisholm existed at all, he did not write anything. If DH* is true, then there are no dogs for my sister to have and perhaps no
sister to have them. DH* prompts these sorts of radical revisions to our overall belief sets, but CS does not. Thus, CS is much more conservative than DH*.

It bears mentioning that considerations of conservatism only favor CS over ISHs for those whose beliefs presuppose mind-independent external world objects. If there are committed skeptics who hold DH* and whose beliefs are consistent with their skeptical views, DH* will likely be more conservative than CS and its other competitors. So, the virtue of conservatism will not be a virtue of any of the competing explanations for a completely neutral participant in the skeptical debate.

4.3.2.6 Assessment

CS seems to be better than DH* with respect to explanatory virtues. CS is clearly superior to DH* with respect to explanatory simplicity and unanswerable explanatory questions. CS is superior to DH* with respect to conservatism for most normal believers, however, for committed skeptics who hold DH* it will be superior to CS. Additionally, the explanatory virtues, which one might initially think clearly favor DH* over CS, quantitative parsimony and qualitative parsimony, do not obviously do so. As noted above, before the case can be convincingly made that DH* is superior to CS with respect to these virtues one would need to provide reasons for thinking that particular methods for counting entities and counting kinds of entities are correct. Given these considerations, it seems that CS is a more virtuous explanation than DH*. Since what has been said about DH* applies to the other skeptical alternatives
as well, CS is a better explanation of the features of our sensory experiences than its skeptical rivals.

### 4.3.3 Objection: A Disjunctive Explanation

One might think that even if it is granted that CS is a better explanation than each of the individual skeptical alternatives, the disjunction of the many skeptical alternatives may be an equally good or better explanation than CS.\(^\text{162}\) So, one might worry that a disjunctive explanation of the features of our sensory experiences which claims that our sensory experiences have the features they do because either we are deceived by a demon or we are brains-in-vats or we are in the *Matrix* and so on offers an equally good explanation of the features of our sensory experiences as CS.

Although this sort of disjunctive skeptical hypothesis (DSH) may at first glance seem to pose a problem for the claim that CS is the best explanation of the features of our sensory experiences, it does not. Similar considerations to those mentioned above show that CS is a better explanation than DSH. First, since DSH is simply a disjunction of independent explanations for the same set of data, it seems that DSH merely maps out some of the conceptual space. DSH merely informs us that the features of our sensory experiences are explained by the activity of a deceitful demon or a super-computer stimulating our in-vatted brains and so on. This provides no explanation of the features of our sensory experiences at all. To see this more clearly, consider this sort of case:

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\(^{162}\) On one reading, Fumerton (1995) raises this worry.
A parent finding her son outside playing baseball and the living room window broken asks her son to explain how the window was broken. The son replies “either I hit a baseball through the window or the neighbor girl threw a baseball through the window or the CIA broke it as part of a covert mission or aliens broke the window because they hate windows or it just shattered on its own or you broke it and forgot about it.”

Clearly, in this case the son has not provided an explanation of the window’s being broken. He has mapped out some of the space of potential explanations of the window’s breaking. However, merely noting some of the potential explanations of an event is not sufficient for providing an explanation of the event. Just as the son’s proffered “explanation” fails to be explanatory, DSH fails to offer a genuine explanation of the features of our sensory experiences. DSH fails to provide a genuine explanation because it does not tell us why our sensory experiences have the features that they do, instead DSH notes several different ways in which we might have sensory experiences with the features we do.

Second, since CS is more explanatorily virtuous than any individual skeptical alternative, it will be more explanatorily virtuous than their disjunction. DSH will not fair any better than the best of its disjuncts with respect to the explanatory virtues discussed above. First, DSH will be committed to the existence of at least as many individual entities as the most quantitatively parsimonious of the individual skeptical alternatives that are its disjuncts. Second, DSH will be committed to the existence of at least as many kinds of entities as its most qualitatively parsimonious disjunct.
However, as noted above it is not clear that skeptical alternatives have any advantage over CS with respect to quantitative parsimony or qualitative parsimony. Third, DSH will have to posit at least as many fundamental explanatory regularities as its best disjunct, which will be more than CS. Fourth, DSH will raise at least as many unanswerable explanatory questions as its best disjunct, which will be more unanswerable explanatory questions than CS raises. Fifth, DSH will only be as conservative as its most conservative disjunct, which will be less conservative than CS (for any non-skeptic that is). In light of these facts, CS will be at least as explanatorily superior to DSH as CS is to the most explanatorily virtuous of DSH’s disjuncts.

Given these considerations it is clear that the disjunctive skeptical explanation, DSH, does not offer the skeptic a rival explanation that is the equal of CS.

4.3.4 Objection: The Chance Hypothesis

At this point one might object to the Explanationist Response by noting that it could be the case that our sensory experiences occur and have the features that they do as a matter of chance. The idea is that Chance, the hypothesis which claims that all that exists is our minds and chance-induced states of mind, fits with all of our sensory evidence. More explicitly, Chance accounts for the relevant features of our sensory experiences (their spontaneous, involuntary character, their coherence within and across sensory modalities, and their coherence with volitional activity) by claiming
these features are the product of chance. According to this hypothesis, the features of our sensory experiences at any given time are generated randomly, so there is no underlying causal structure that can be appealed to in order to explain the features of our sensory experiences. Given the possibility of Chance, one might think that CS fails to provide the best explanation of the relevant features of our sensory experiences.

Admittedly, it seems that Chance is both more quantitatively parsimonious and more qualitatively parsimonious than CS. After all, CS posits the same minds and mental states that Chance does plus material objects. Also, it is not implausible to think that Chance is better than CS in terms of explanatory simplicity because it seems that Chance posits at most a single explanatory regularity or perhaps none at all. So, it seems that of the five explanatory virtues discussed above CS is only clearly superior to Chance with respect to explanatory questions because Chance does not really seem to provide answers to explanatory questions and conservatism because discovering that Chance is true would definitely require an extensive revision of our existing beliefs. Thus, one might be inclined to think that Chance is a better explanation than CS, or at least as good as CS; and therefore, one might think that the Explanationist Response fails.

Although Chance does seem to fare better than CS with respect to some explanatory virtues, Chance does not offer the skeptic succor from the Explanationist Response. The reason is that there are good grounds for ruling out Chance as the
truth about our sensory experiences. To see this point, consider the nature of our sensory experiences from a particular sense modality, say vision. Our visual experiences are coherent in the sense that at any particular time the variety of colors and shapes we see fit into a well-organized pattern. Additionally, our visual experiences at different times are coherent with one another. For example, my visual experiences as I stare at my computer screen do not radically change from moment to moment. Further, if I blink, the visual experiences that I have after blinking are not radically different from those I had prior to blinking. According to Chance, this coherence among our visual experiences is merely the product of chance. So, Pr (coherent visual experiences/Chance) ≤ .5. Chance says the same about our experiences from the other sensory modalities as well. That is to say, Pr (coherent auditory experiences/Chance) ≤ .5, Pr (coherent tactile experiences/Chance) ≤ .5, Pr (coherent gustatory experiences/Chance) ≤ .5, and Pr (coherent olfactory experiences/Chance) ≤ .5. Given these probabilities, the probability that our sensory experiences from various sensory modalities fit together coherently with sensory experiences from other sensory modalities is very low. For example, the probability that when you have a coherent visual experience as of reaching out to touch an object you will have a coherent tactile experience of your hand meeting resistance corresponding to the visual experience of making contact with the object given Chance is at most .25. So, it is easy to see that, given Chance, the probability that the experiences we have from several of these sensory modalities are all coherent is

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163 BonJour (1985) seems to endorse the sort of response that follows.
significantly less than .5. Since Pr (experiences from several sensory modalities are coherent/Chance) = significantly less than .5, Pr (experiences from several sensory modalities are coherent/not-Chance) = significantly more than .5. The fact that experiences from several sensory modalities are coherent supports not-Chance much more than it supports Chance. So, the evidence from our sensory experiences favors not-Chance over Chance. Given this fact, we are justified in believing not-Chance.

Now, it should be noted that the fact that we are justified in believing not-Chance is not enough to show that we should believe CS. Not-Chance contains all the possible accounts of our sensory experiences, which do not claim that they are simply the result of chance. So, not-Chance will include, in addition to CS, all of the skeptical alternatives other than Chance. Thus, based on the a priori probabilities that we can assign to Chance, our evidence from our senses gives us good reason to think that either CS or one of the skeptical alternatives besides Chance is true. So, even though Chance can be ruled out, reason must be provided for thinking that CS is the correct choice among the not-Chance options. According to the Explanationist Response, this reason in support of CS comes from inference to the best explanation. Thus, although Chance may seem to pose a problem for the Explanationist Response, it does not because Chance can be ruled out as an explanation of the features of our sensory experiences.
4.4 Concluding and Looking Forward

In this chapter I have presented two considerations in favor of the central claim of the Explanationist Response, the claim that CS is the best explanation of the features of our sensory experiences. I have argued that there is good reason to accept Jonathan Vogel’s (2008) *reductio ad absurdum* argument that CS is the best explanation of the features of our sensory experiences. I have also argued that there is good reason to believe that CS is the best explanation of the features of our sensory experiences because it fairs better with respect to explanatory virtues than all of its skeptical rivals. Each of these considerations alone provides a good reason to believe that CS is the best explanation of the features of our sensory experiences. Together these considerations make a very strong case in support of CS as the best explanation of the features of our sensory experiences. Thus, this chapter adds to the work of the previous chapters by providing the needed support for the central claim of the Explanationist Response, thereby showing that it is reasonable to accept the Explanationist Response as a successful reply to skepticism.

The final chapter, which immediately follows, will be concerned with defending the Explanationist Response from a variety of objections that have been raised against it. The positive case that has been made for the Explanationist Response in this chapter and previous chapters coupled with the final chapter’s defense of the Explanationist Response from the strongest objections leveled at it demonstrate that the Explanationist Response should be accepted as an adequate response to skepticism.
Chapter 5: Defending the Explanationist Response

5.1 Introduction

In the preceding four chapters I examined the nature of the skeptic’s argument, Underdetermination-E, and various constraints on how he can plausibly use this argument to make his attack on our justification for external world beliefs. I presented four criteria that a response to skepticism must satisfy in order to be considered acceptable and I argued that the Explanationist Response can satisfy all of these criteria. Further, I noted that our set of commonsense beliefs (CS) includes beliefs about particular objects such as “I am looking at a computer screen”, “The dog is barking”, etc. as well as beliefs about various causal regularities such as “Unsupported objects will fall to the ground”, “When mirrors are struck hard by another object they shatter”, and so on. The beliefs that constitute CS entail the existence of mind-independent external objects, which are relatively stable in their composition and the way they impact our sense organs, as well as various causal regularities among these objects. I explained how CS provides a good explanation of the coherence of our sensory experiences, the involuntary manner in which we have sensory experiences, and the fit between our sensory experiences and our volitional activity. Finally, I argued that not only is CS a good explanation of the features of our sensory experiences, it provides a better explanation of those features than all its skeptical competitors. Together these four chapters constitute a strong case in
support of the claim that the Explanationist Response is a successful response to external world skepticism.

In this final chapter, I will turn toward a defense of the Explanationist Response. More specifically, I will consider and reply to prominent objections that have been raised against various explanationist responses to skepticism. I will argue that none of these objections are effective against the Explanationist Response as I have presented it.

5.2 Objections

5.2.1 No Cause

The first objection to the Explanationist Response is an objection put forward by Richard Fumerton (1995). Fumerton states the “No Cause” objection in the following way:

[R]easoning to the best explanation seems to presuppose that it is likely that phenomena have explanations. Unless we have an antecedently justified belief that most things have explanations, it is difficult to see why we would take the fact that one potential explanation seems better than others as a reason for supposing that the potential explanation is true…If in justifying our beliefs about the past or the physical world we must suppose that most events have causes, the skeptic will inquire as to our justification for that supposition. Was it inductively established? If so, how was that inductive justification accomplished without a prior solution to the problem of justifiably believing
propositions about the past?…If in reaching the conclusion that most events have causes we rely on the fact that our sensations have causes, we will again need a prior solution to skepticism about the physical world and we will be precluded from using reasoning to the best explanation in order to get that solution.\(^{164}\)

The first thing to note about the No Cause objection as Fumerton construes it is that it seems to involve not just skepticism about the external world, but also skepticism about induction. Although Fumerton expresses this objection in a way that seems to be pressing a form of exotic skepticism, namely inductive skepticism, I think that his discussion of the problems with trying to use induction to establish the assumption that our sensory experiences have causes obscures things a bit.\(^{165}\) The heart of this objection is not dependent upon skepticism about induction, which means that the objection can legitimately be posed for responses to domestic skepticism such as the Explanationist Response. Presumably, the point of Fumerton’s objection is that empirical phenomena, such as our sensory experiences, may be uncaused, and hence have no causal explanation. If it is granted that our sensory experiences are caused, then it follows that they have some causal explanation or

\(^{164}\) Pg. 208 Also see Fumerton (1992) pgs. 162-163.

\(^{165}\) Recall from chapter one that domestic skepticism does not contest the legitimacy of our epistemic principles and accepted forms of reasoning such as induction while exotic skepticism does contest them. Additionally, as was stated in chapter one, the Explanationist Response only purports to be a response to domestic skepticism. So, it is no failing of the Explanationist Response if it does not provide a response to skepticism about induction, which is a form of exotic skepticism.
other. So, it seems that the worry here is that the key claim of the Explanationist Response, that CS is the best explanation of the features of our sensory experiences, presupposes that our sensory experiences have a cause, and so have a causal explanation. However, according to Fumerton, it is not clear that this presupposition is justified. Thus, the No Cause objection challenges the claim that CS is the best explanation because it challenges the presupposition that our sensory experiences admit of a causal explanation at all.

There are two different approaches to responding to this objection, both of which are plausible. The first is to deny that the Explanationist Response is reliant upon the assumption that our sensory experiences are caused. The second is to admit that the Explanationist Response does need this assumption, but maintain that there is nothing problematic in making the assumption that our sensory experiences have a cause(s). I will explain both of these responses beginning with the former.

In a very basic sense a causal explanation of a phenomenon explains the occurrence of the phenomenon by providing information about the causal factors that led to its occurrence. It is not unreasonable to think that claiming that a particular phenomenon has no cause is itself a causal explanation. Pointing out that no causal factors led to a phenomenon’s occurrence provides the sort of information that causal explanations are supposed to provide: it informs us that there is no answer to the question of why this phenomenon occurred, other than perhaps that it was simply random chance. Additionally, this sort of information provides us with answers to various other explanatory questions because given the fact that the phenomenon was
uncaused we know that if things had been manipulated to be different in various ways, doing so would not have affected the probability of whether the phenomenon would occur or not. So, it is not unreasonable to think that the claim that a phenomenon has no cause is itself a causal explanation. Thus, it is not clear that the Explanationist Response requires the assumption that our sensory experiences are caused because the claim that our sensory experiences are uncaused can itself be understood as a causal explanation. Since the claim that our sensory experiences are uncaused constitutes a causal explanation of our sensory experiences, it can be evaluated relative to CS on explanatory grounds and CS can be shown to be the superior explanation without any prior assumption about whether or not our sensory experiences are caused.

Another way of responding to the No Cause objection is to admit that the Explanationist Response does seem to rely on the assumption that our sensory experiences are caused and then argue that this does not generate a problem for the

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166 An additional way in which one might maintain that the Explanationist Response does not rely on the assumption that our sensory experiences are caused is to point out that the Explanationist Response is not committed to a particular variety of explanation. That is, the Explanationist Response is consistent with non-causal explanations of our sensory experiences. And so, the Explanationist Response is still viable if our sensory experiences are not caused so long as CS (construed as a non-causal explanation) is the best explanation of our sensory experiences. I do not find this approach promising in general because I think that the relevant sort of explanation for the issue of external world skepticism is causal explanation. However, this approach is worth mentioning because it is broadly consistent with the Explanationist Response and it seems to render the No Cause objection ineffective.
Explanationist Response. There are a couple of things that can be said in support of the Explanationist Response’s appeal to the assumption that our sensory experiences have causal explanations. First, this assumption seems to be shared by the skeptic who uses Underdetermination-E and similar arguments. The skeptic’s argument seems to presuppose that our sensory experiences are caused because the skeptical alternatives that are typically presented as rivals to CS (Descartes’ Demon, brains-in-vats, etc.) are all causal explanations. So at the very least, the supporter of the Explanationist Response does not seem to be begging the question against the skeptic by assuming that our sensory experiences have causal explanations because the skeptic appears to share that assumption.

Second, there is good reason think that our sensory experiences are caused. The claim that our sensory experiences are not caused seems to be equivalent to saying that they occur by chance. As explained in the previous chapter, there are good reasons to think that the hypothesis that our sensory experiences are the product of chance is very unlikely. Our sensory experiences are coherent and they have a high degree of continuity over time.¹⁶⁷ As Laurence BonJour (1985) aptly notes, if our sensory experiences “were genuinely produced by chance or at random, then it is

¹⁶⁷ One might worry about this claim because it is reliant upon memory, which is a faculty that the skeptic may wish to call into question. It is true that this claim does rely upon our memory; however, it is important to keep in mind that the kind of skepticism that is the focus of this project is only skepticism about our external world beliefs. That is to say, the skepticism under examination does not call into question our memory or our other cognitive faculties.
very likely that the coherence of the system would be continually disrupted.\textsuperscript{168} The idea is that given the coherence of our sensory experiences the likelihood of the hypothesis that our sensory experiences are the product of chance is very low.\textsuperscript{169} Since the probability that our sensory experiences are simply the product of chance is very low, the probability that they are not simply the product of chance is high. That is to say, it is likely that our sensory experiences are caused. Given these considerations, there seems to be no reason to think that it is problematic to assume that our sensory experiences have a causal explanation.

Since the supporter of the Explanationist Response has two different ways of responding to the No Cause objection, both of which are reasonable, the No Cause objection does not pose a serious problem for the Explanationist Response.

5.2.2 CS Does Not Explain Our Sensory Experiences

Another objection to the Explanationist Response has been put forward by Ram Neta (2004). Neta challenges the claim that CS is the best explanation of the features of our sensory experiences. He does not challenge this claim on the grounds that skeptical alternatives are equally good explanations or that CS is not clearly the best explanation of the features of our sensory experiences, instead he attacks the Explanationist Response by arguing that CS is not an explanation of our sensory experiences at all. As Neta says, it is not that CS is “not clearly the best explanation

\textsuperscript{168} Pg. 172

\textsuperscript{169} For a nice discussion of this claim in terms of probabilities see Van Cleve (1988).
of our sensory data. The problem, rather, is that our beliefs about the external world [CS] cannot provide any explanation at all of our sensory data.\textsuperscript{170}

Of course, if Neta is correct that CS is not an explanation of the features of our sensory experiences, then CS obviously cannot be the best explanation of our sensory experiences. If CS is not the best explanation of the features of our sensory experiences, then the Explanationist Response to skepticism is hopeless. But, why think that CS is not an explanation of the features of our sensory experiences? Neta claims that there are a number of questions that need to be answered by an explanation of our sensory experiences:

1) Why is there anything that has the property of being unable to be different from how it appears (i.e., why does subjectivity exist)?

2) Why do the qualitative features of our sensory experiences fall within the range they do rather than within some other range?

3) Why do particular subjective facts obtain just when they do (e.g., why does coffee taste like \textit{this} rather than like pizza)?\textsuperscript{171}

Neta argues that since CS does not provide answers to these questions it fails to provide an explanation of the features of our sensory experiences, and thus, the Explanationist Response cannot be an adequate response to skepticism.

\textsuperscript{170} Pg. 299 His emphasis.

\textsuperscript{171} This is Beebe’s (2009, pg. 614) formulation of Neta’s questions. I use Beebe’s formulation of the questions because they are presented in a more concise way than Neta’s original presentation.
Admittedly, it does seem that CS does not answer Neta’s questions. However, this does not show that CS “cannot provide any explanation at all of our sensory data.” Recall from chapter four that with respect to skeptical challenges the features of our sensory experiences that are typically taken to be relevant are “the involuntary, spontaneous character of their occurrence”, the fact that they “fit together and reinforce each other in a coherent fashion, presenting a relatively seamless and immensely complicated picture of an ongoing physical world”, and the fact that they cohere with our volitional activity. CS provides an explanation of these facts. Additionally, James Beebe (2009) has identified a number of explanatory questions about the features of our sensory experiences that CS provides an answer to:

1) What sorts of objects or events are the distal causes of our ordinary sensory experiences?

2) Why is there continuity between the various visual sensory experiences we can have of (what appears to be) a single object?

3) Why is there coordination between our visual, auditory, tactile, gustatory and olfactory sensory experiences?

4) Why are features of our sensory experiences correlated in just the way we would expect them to be if some of the things we experience were the causes of other things we experience?\(^{173}\)

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\(^{172}\) BonJour (2003) pg. 85 See also BonJour (1999) and Vogel (2008b).

\(^{173}\) Pg. 614-615
Given that CS provides answers to a number of explanatory questions concerning features of our sensory experiences, Neta’s claim that CS “cannot provide any explanation at all of our sensory data” is clearly false. Therefore, Neta’s objection does not prove to be detrimental to the Explanationist Response.

Although Neta’s claim concerning the explanatory status of CS is false, one might worry that perhaps CS does not explain the relevant features of our sensory experiences. After all, while CS explains many features of our sensory experiences, it fails to provide answers to Neta’s questions. So, one might question why the features that CS does offer an explanation of are the ones that matter instead of the features Neta mentions.

In response to this worry it is important to recall some features of skeptical alternatives to CS. First of all, skeptical alternatives to CS fail to answer Neta’s questions too. Secondly, skeptical alternatives at least have the appearance of offering explanations of the features of our sensory experience that CS does. These facts coupled with the fact that skeptical alternatives are supposed to challenge our commonsense beliefs by providing reasons to think that CS and skeptical alternatives are underdetermined provide strong reasons for thinking that the relevant features of our sensory experiences are those for which both CS and skeptical alternatives offer explanations. Thus, it is reasonable to conclude that CS is an explanation of the relevant features of our sensory experiences even if it does not provide answers to the questions that Neta mentions.

Beebe (2009) offers similar considerations.
5.2.3 Using A More Questioned Source to Defend A Less Questioned Source

James Beebe (2009) proposes an objection to the Explanationist Response that is in the spirit of an objection Arthur Fine (1984) makes against using inference to the best explanation to support scientific realism. According to Fine the following is a maxim that “applies with particular force to the discussion of realism”:

Metatheoretic arguments must satisfy more stringent requirements than those placed on the arguments used by the theory in question, for otherwise the significance of reasoning about the theory is simply moot.\(^\text{175}\)

Fine argues that the use of inference to the best explanation to argue for scientific realism is illegitimate because “to argue for realism one must employ methods more stringent than those in ordinary scientific practice. In particular, one must not beg the question as to the significance of explanatory hypotheses by assuming that they carry truth.”\(^\text{176}\)

Although Beebe finds Fine’s purported maxim dubious, he thinks that there is a similar principle that is plausible and he thinks the Explanationist Response is problematic because it violates this principle. Here is Beebe’s principle:

(BP): In the context of a debate about the epistemic credentials of a particular belief source one should not appeal to a belief source whose credentials are far more widely in dispute than the source one seeks to defend.\(^\text{177}\)

\(^{175}\) Pg. 85

\(^{176}\) Ibid. pg. 85-86

\(^{177}\) Beebe (2009) pg. 626
Beebe notes that “the credentials of perception as a source of belief about the external world seem to be far less questionable than those of IBE [inference to the best explanation].”  

He goes on to claim that the Explanationist Response violates BP because it seeks to defend the credentials of a less questioned belief source, perception, by using a more questioned source, inference to the best explanation. Beebe concludes that while “this objection is far from being decisive, there is something unsatisfying about defending [perception]—which no one really doubts—by using IBE—which many strongly doubt”. Thus, Beebe maintains there is something amiss with the Explanationist Response.

Though Beebe is correct that “this objection is far from being decisive”, his claim that there is something unsatisfying about the Explanationist Response is mistaken. The problem with Beebe’s claim is that it is not clear that the Explanationist Response actually violates BP. The Explanationist Response is not itself an attempt to defend the credentials of perception as a source of belief. Rather, the Explanationist Response is an attempt to defend perceptual beliefs from skeptical attacks. Providing justification for thinking that a belief source is a reliable producer of true beliefs is a very different task than providing justification for thinking that

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178 Ibid. pg. 626

179 Ibid. pg. 626 In this quote I replaced “RWH” (real world hypothesis) with “perception”. The reasons for this are that Beebe’s principle is a principle about belief sources and the RWH is not a belief source. Also, the sentence quoted here is the first mention of the RWH whereas perception is the object of discussion until this point in Beebe’s paper, which leads one to think that “RWH” here is a misprint.
beliefs produced by that source are not undermined by skeptical arguments. As noted in chapter three, the Explanationist Response is compatible with a number of accounts of perceptual justification in part because it makes no claims about why perceptual beliefs are justified. That is, the Explanationist Response does not attempt to offer an account of what makes perception an acceptable source of beliefs. Instead, the Explanationist Response only attempts to show that the skeptic’s argument fails to provide sufficient grounds for reasonably believing that perceptual beliefs are not justified. Thus, the Explanationist Response is not in violation of BP and it is not unsatisfying in the way that Beebe suggests.

5.2.4 Best of a Bad Lot

A common objection to inference to the best explanation that may be used to object to the Explanationist Response is van Fraassen’s (1989) well-known “Best of a Bad Lot” objection. According to van Fraassen when we choose the best available explanation from a set of competing explanations “our selection may well be the best of a bad lot.” That is, van Fraassen argues that recognizing that H is the best available explanation of F is not enough to justify belief in H. As he says:

To believe is at least to consider more likely to be true, than not. So to believe the best explanation requires more than an evaluation of the given hypothesis. It requires a step beyond the comparative judgment that this hypothesis is better than its actual rivals…For me to take it that the best of set

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180 Pg. 143
X will be more likely to be true than not, requires a prior belief that the truth is already more likely to be found in X, than not.\(^{181}\)

There are two ways of understanding van Fraassen’s Best of a Bad Lot objection. One way is to understand it as a version of the “Truth Demand”, which is the challenge of providing reasons for thinking that explanatory virtues are related to truth.\(^{182}\) Though I think that understanding van Fraassen’s objection as a version of the Truth Demand is most in line with what he intends and is the strongest form of this objection because it challenges the idea that being a good explanation is correlated with being likely to be true, I will set this way of understanding van Fraassen’s objection aside for now because I will discuss the Truth Demand in more detail later in this chapter. The second way of understanding van Fraassen’s objection is as challenging the thought that one can legitimately infer that the best explanation is true on the grounds that the set of available explanations might all be bad explanations. Although this way of construing the objection has a straightforward response, it is worth considering because one might think of the Best of a Bad Lot in this way and because it does bring to light an important qualification for inference to the best explanation in general.

As noted above, the second way of construing the Best of a Bad Lot objection admits of a straightforward response. In general, inference to the best explanation can be defended from this objection by placing a minimum threshold on how good an

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\(^{181}\) Ibid. pg. 143

\(^{182}\) I follow Vogel (Manuscript) in referring to this challenge as the “Truth Demand”.

explanation has to be in order to be inferred. That is to say, van Fraassen’s objection illuminates the fact that inference to the best explanation should be understood as inference to the best available explanation that is “good enough”. What does it take for an explanation to be “good enough”? Considerations that will be important here will be how much of the data to be explained the explanation actually explains and how the explanation fairs in terms of explanatory virtues. I will not attempt to provide a precise account of what is required to be “good enough” because my purpose here is not to offer a general defense of inference to the best explanation, but instead to defend the Explanationist Response.

What matters for the current endeavor is that one might object to the Explanationist Response by pressing the Best of a Bad Lot objection. To do this one would argue that although CS is the best explanation of the features of our sensory experiences, it may only be the best of a bad lot and thus it should not be accepted as true. There are two things to be aware of with respect to this way of objecting to the Explanationist Response. The first is that CS is a very good explanation. CS accounts for all of the relevant features of our sensory experiences in a non-ad hoc way. The second is that wherever the threshold for “good enough” is reasonably set, it is extremely likely that CS meets this threshold. As I argued in chapter three, the reason the skeptic attempts to provide alternatives that are empirically equivalent to CS instead of merely pointing out that CS is not sufficiently supported by the

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183 Lipton (2004) notes that an explanation needs to meet some minimum standards in order to be inferred even if it is the best available explanation.
evidence when one considers only CS and the evidence from our sensory experiences is that CS fits the evidence from our sensory experiences extremely well. Since the evidence from our sensory experiences supports CS when CS is not challenged by skeptical alternatives, it is plausible that CS meets the minimum threshold for being a “good enough” explanation.

5.2.5 Indifference

Another well-known objection to inference to the best explanation is what is often called the “Argument from Indifference”. Like the previous objection, this objection has been put forward by van Fraassen (1989):

I believe, and so do you, that there are many theories, perhaps never yet formulated but in accordance with all evidence so far, which explain at least as well as the best we have now. Since these theories can disagree in so many ways about statements that go beyond our evidence to date, it is clear that most of them by far must be false. I know nothing about our best explanation, relevant to its truth-value, except that it belongs to this class. So I must treat it as a random member of this class, most of which is false. Hence it must seem very improbable to me that it is true.\(^\text{184}\)

Thus, van Fraassen claims that the fact that H is the best available explanation of F does not justify us in thinking that H is true because H is simply one of a very large

\(^{184}\) van Fraassen (1989) pg. 146
number of mostly false theories (most of which we have not thought of yet) that explain F equally well.

Some have argued against van Fraassen on this point by maintaining that the way in which we come to form theories, at least in the empirical sciences, precludes our best explanations from being merely members of a large set of mostly false theories. They point out that we have a large amount of background knowledge that goes into our theory formation practices and that this background knowledge increases the likelihood that our best explanations are correct.

Although the sort of response that appeals to background knowledge may work for non-skeptical matters, it is not clear that it will help the Explanationist Response because the background knowledge that is appealed to is plausibly under attack from the skeptic’s argument as well. Fortunately, the Explanationist Response does not need to appeal to background knowledge and theory formation practices in order to adequately respond to this objection. In order to defend the Explanationist Response from this objection one only needs to consider van Fraassen’s claim that “I believe, and so do you, that there are many theories, perhaps never yet formulated but in accordance with all evidence so far, which explain at least as well as the best we have now.” Setting aside the fact that his rhetorical flourish “and so do you” makes this sentence clearly false, at least if by “you” he means me or most supporters of the Explanationist Response, there is an obvious problem with van Fraassen’s claim. The problem is that van Fraassen uses this claim about what is believed about theories to

establish a claim about what is true of theories. van Fraassen uses the claim that it is believed that our best theories are members of sets of theories which all explain the relevant data equally well to support the claim that our best explanations are in fact members of such sets of theories. What van Fraassen needs instead of this claim about our beliefs concerning theories is the claim that there are many theories that are equally good or better explanations than our current best explanations. Of course, this is a claim that a supporter of the Explanationist Response will deny with respect to CS. All the skeptical competitors to CS are explanatorily inferior and neither van Fraassen nor anyone else has provided reasons for thinking that there is a single theory that is the explanatory equal of CS, let alone “many theories…which explain at least as well” as CS. Without grounds for thinking that there are such competitors to CS, there is no reason to accept van Fraassen’s conclusion that our best explanation of our sensory experiences, CS, is not likely to be true. Thus, the Argument from Indifference does not pose a problem for the Explanationist Response.

5.2.6 The Truth Demand

The final objection to be considered is what Jonathan Vogel (Manuscript) has termed the “Truth Demand”. As noted above, on one reading van Fraassen’s Best of a Bad Lot objection is a version of the Truth Demand. The Truth Demand has been pressed in numerous other forms as well. James Beebe (2009) says “the satisfaction of the explanatory criteria cannot provide us with an epistemic reason to believe [CS] is true.
if those criteria are not themselves truth-linked.” Richard Fumerton (1995) seems to make the Truth Demand when he says:

$E_1$ might be better than $E_2$, than $E_3$, than $E_4$ and so on. This fact by itself does not imply that even if we are justified in believing that one of these explanations is correct, we are justified in believing that $E_1$ is the correct explanation…I can cheerfully admit that $E_1$ is the most attractive explanation while admitting that the disjunction of propositions asserting alternative explanations is much more likely to be true…To refute the skeptic…you must establish that our commonsense hypotheses are more likely to be the correct explanation of these phenomena than the disjunction of all alternative explanations.187

Peter Lipton (2004) expresses the Truth Demand as follows:

Why should the explanation that would provide the most understanding if it were true be the explanation that is most likely to be true? Why should we live in the loveliest of all possible worlds? Voltaire’s objection is that, while loveliness may be as objective as you like, the coincidence of loveliness and likeliness is too good to be true. It would be a miracle if using explanatory considerations as a guide to inference were reliably to take us to the truth.188

186 Pg. 619 I have replaced “RWH” in the original with “CS” here.

187 Pg. 209-210 See also Fumerton (1992).

188 Pg. 144
van Fraassen (1980) also appears to be pressing the Truth Demand when he says “some writings on the subject of induction suggest that simpler theories are more likely to be true. But it is surely absurd to think that the world is more likely to be simple than complicated.”\textsuperscript{189} All of these versions of the Truth Demand present the same challenge to the acceptableness of relying on inference to the best explanation. The Truth Demand challenges the supporter of inference to the best explanation to give reasons for thinking that explanatory virtues, which make one explanation better than another, are connected to the truth. That is, the Truth Demand is a demand for reasons to think that the best explanation is likely to be true.

Jonathan Vogel (Manuscript) aptly notes that the various versions of the Truth Demand can be understood as pressing an argument that beliefs licensed by inference to the best explanation are not justified. Here is Vogel’s formulation of the Truth Demand argument:

1) A belief licensed by inference to the best explanation will be justified only if we are justified in believing that such a belief is likely to be true.

2) We are justified in believing that a belief licensed by inference to the best explanation is likely to be true only if we are justified in believing that the world is lovely.

3) We aren’t justified in believing that the world is lovely.

4) Therefore, we aren’t justified in believing that a belief licensed by inference to the best explanation is likely to be true.

\textsuperscript{189} Pg. 90
5) Therefore, a belief licensed by inference to the best explanation isn’t justified.\textsuperscript{190}

Interestingly, Vogel points out that if the Truth Demand “impeaches inference to the best explanation, it does the same with respect to inductive inference of any sort.”\textsuperscript{191} So, if the Truth Demand supports the above argument, it supports the following argument just as well:

6) A belief licensed by enumerative induction is justified only if we are justified in believing that such a belief is likely to be true.

7) We are justified in believing that a belief licensed by enumerative induction is likely to be true only if we are justified in believing that the world is uniform in the right way.

8) We aren’t justified in believing that the world is uniform in the right way.

\textsuperscript{190} Pg. 4 With respect to an explanation ‘loveliness’ refers to the explanation’s possessing explanatory virtues. So, the lovelier of two explanations is the explanation that is more explanatorily virtuous. The claim that ‘the world is lovely’ refers to the idea that explanatory virtues are correlated to the truth in the sense that explanations that are explanatorily virtuous are likely to be true.

\textsuperscript{191} Ibid. pg. 5

\textsuperscript{192} It is worth noting that those who share Gilbert Harman’s (1965) view that induction is simply a special case of inference to the best explanation are committed to endorsing Vogel’s claim. See, for example, Lycan (1988) and White (2005a). Additionally, it plausible that those, like Richard Fumerton (1980), who think that inference to the best explanation collapses into induction may be committed to Vogel’s claim as well.
9) Therefore, we aren’t justified in believing that a belief licensed by enumerative induction is likely to be true.

10) Therefore, a belief licensed by enumerative induction isn’t justified.\textsuperscript{193}

Since the Truth Demand supports these arguments equally and it can be used to make similar arguments against any form of inductive reasoning, Vogel concludes that “the lesson here is that, so far as the truth-demand goes, inference to the best explanation is on just as good or bad a footing as any other kind of inductive inference.”\textsuperscript{194} Thus, he maintains that “to raise the truth-demand is to challenge the possibility of inductive knowledge in general.”\textsuperscript{195} Therefore, using the Truth Demand to oppose inference to the best explanation collapses into a general skepticism about induction.\textsuperscript{196}

Recall that the Explanationist Response is offered as a response to domestic skepticism about the external world. That is, it is a response to the kind of skepticism about our justification for external world beliefs that does not contest the legitimacy of our epistemic principles or our accepted methods of reasoning such as induction. Since the Truth Demand amounts to a general skepticism of induction, it is not a

\textsuperscript{193} Ibid. pg. 5-6

\textsuperscript{194} Ibid. pg. 6

\textsuperscript{195} Ibid. pg. 6

\textsuperscript{196} Lipton (2004) claims that the Voltaire objection, his way of expressing the Truth Demand, collapses into the Humean problem of induction. Vogel (2004), (2005), (Manuscript) claims that challenging the legitimacy of inference to the best explanation is tantamount to presenting the challenge of skepticism about induction.
proper objection to the Explanationist Response. As Vogel says, the Truth Demand “change[s] the subject under discussion from Cartesian [domestic] skepticism to something else.”\textsuperscript{197} The something else that the Truth Demand transforms domestic skepticism about the external world into is something to which the Explanationist Response does not purport to respond. Thus, the Truth Demand does not impugn the Explanationist Response.

Even if one were convinced that the Truth Demand only threatened inference to the best explanation and not inductive reasoning in general, it is not clear that the Truth Demand would constitute a form of domestic skepticism. Domestic skepticism does not contest the legitimacy of our accepted methods of reasoning. Inference to the best explanation is most assuredly one of our accepted methods of reasoning. The history of science is replete with instances where inference to the best explanation has been used to demonstrate the acceptability of a given theory. For example, Antoine Lavoisier’s argument against phlogiston theory in favor of the oxygen theory of combustion, Christiaan Huygens’ argument in support of the wave theory of light, and, Charles Darwin’s argument in support of natural selection were all inferences to the best explanation.\textsuperscript{198} This use of inference to the best explanation in science is not limited to the history of science. As Clark Glymour (1984) notes, “One can find such arguments [inferences to the best explanation] in sociology, in psychometrics, in

\textsuperscript{197} Vogel (Manuscript) pg. 6

\textsuperscript{198} See Thagard (1978) for a more complete description of these arguments.
chemistry and astronomy … in the most recent of our scientific journals.” In addition to being widely used in the sciences, inference to the best explanation is ubiquitous in everyday life. Jurors at a trial, doctors forming diagnoses on the basis of patients’ symptoms, ordinary people determining what is wrong with a computer when the screen stays black, and so on all make use of inference to the best explanation. In fact this form of reasoning is so pervasive in our reasoning that some have argued that it plausible to think that inference to the best explanation is a basic belief forming method for humans.\footnote{See Enoch and Schechter (2008).}

These considerations make plain the fact that inference to the best explanation is one of our accepted methods of reasoning. Since inference to the best explanation is one of our accepted methods of reasoning, it is not implausible to think that objections that attack inference to the best explanation, such as the Truth Demand, transform domestic skepticism into exotic skepticism. The Explanationist Response is a response to domestic skepticism, but not exotic skepticism. So, the Explanationist Response is not the proper target of objections that result in exotic skeptical challenges. Thus, it is not obviously a mistake to think that the Truth Demand does not impugn the Explanationist Response even if the Truth Demand does not amount to a general skepticism about induction.

Despite the plausibility of the claim that the Truth Demand amounts to a form of exotic skepticism, one might insist that the Truth Demand does not constitute

\footnote{Pg. 173}
exotic skepticism, and thus, that one must answer the Truth Demand before the Explanationist Response can be considered acceptable. While it is not clear that this line of reasoning is correct, even if it is, responding to the Truth Demand is not an insurmountable task. One promising approach for responding to the Truth Demand is to appeal to the inductive evidence that is readily available for the claim that the explanatory virtues utilized in inferences to the best explanation are connected to the truth. There is evidence from the history of science where a theory was initially accepted as a conclusion of an inference to the best explanation and then later confirmed via observational methods; the examples mentioned above provide this sort of evidence. Additionally, there are numerous cases in ordinary life where we make inferences to the best explanation and then confirm the conclusion directly via some other method. For example, if one were to infer that some shingles are missing from her roof because that is the best explanation of the data she has: she has a leak, there were high winds the other night, there are shingles in her yard, etc., the success of inference to the best explanation can be confirmed in this case by climbing onto the roof and discovering that there are shingles missing. These sorts of cases provide inductive support for thinking that explanatory virtues are connected to the truth.

Now, one might reply that although the examples from the history of science and ordinary life provide evidence for thinking explanatory virtues are connected to the truth in normal circumstances, they fail to do so in the context of a discussion of external world skepticism. The idea is that the confirming evidence that these examples provides depends upon beliefs about the external world, beliefs which
cannot be legitimately appealed to when responding to skepticism. There are two things to note about this claim. First, the Truth Demand is a separate problem from skepticism. As such, it is not implausible to think that one can respond to the two problems separately even if the skeptic is endorsing both a skeptical argument and the Truth Demand. Second, maintaining that external world beliefs cannot be appealed to when answering the Truth Demand makes the Truth Demand resemble the problem of induction even more closely. So, it makes it less clear that the Truth Demand does not amount to a form of exotic skepticism. That being said, there are at least two other promising responses to the Truth Demand, neither of which appeal to beliefs about the external world. Perhaps unsurprisingly both of these responses are adapted from similar responses to the problem of induction.

One way of responding to the Truth Demand without appealing to external world beliefs involves appealing to rational reflection. As Henry Kyburg Jr. (1965a) says:

I think that in some sense our justification of inductive rules must rest on an ineradicable element of inductive intuition—just as I would say that our justification of deductive rules must ultimately rest, in part, on an element of deductive intuition: we see that modus ponens is truth-preserving—that is simply the same as to reflect on it and fail to see how it can lead us astray. In the same way, we see that if all we know about in all the world is that all the
A’s we’ve seen have been B’s, it is rational to expect that the next A will be a B. 201

Kyburg appeals to rational reflection as a way to justify inductive reasoning because he takes inductive reasoning to be a fundamental form of reasoning just as deductive reasoning is. Since inductive reasoning is fundamental, it does not make sense to attempt to justify it in terms of some other more basic form of reasoning. Thus, rational reflection provides the only non-circular way of justifying inductive reasoning.

One might adopt a view similar to Kyburg’s when responding to the Truth Demand. On the plausible assumption that inference to the best explanation is a fundamental form of reasoning, the only non-circular way of justifying it will come from rational reflection. 202 If inference to the best explanation is a fundamental form of reasoning, it is to be expected that it will be justified in the same way as other

201 Pg. 276 Carnap (1968), Kyburg (1956), Lycan (1988), and Psillos (1999) all claim that both basic forms of deductive reasoning and basic forms of inductive reasoning are justified by rational reflection. In a similar vein, Goodman (1965) claims that all inference rules are justified by a sort of reflective equilibrium, “The process of justification is the delicate one of making mutual adjustments between rules and accepted inferences; and in the agreement achieved lies the only justification needed for either” (pg. 64).

fundamental forms of reasoning, that is, by rational reflection. So, mirroring Kyburg, one might claim that we see that if H is the best explanation of our evidence, it is rational to expect H to be true.\(^{203}\) This is the best that can be expected when one is justifying a fundamental form of reasoning; to ask for justification in terms of some other more fundamental truth relation is to misunderstand what is involved in being a fundamental form of reasoning.

Given the plausible assumption that in order for it to be rational for one to expect H to be true it must be that H is likely to be true given one’s evidence, appeal to rational reflection offers a plausible way of meeting the Truth Demand. In other words, one might attempt to satisfy the Truth Demand by claiming that when we reflect on various explanations we see that the one that is the most explanatory virtuous is likely to be true. Thus, one might attempt to meet the Truth Demand by making the plausible claim that inference to the best explanation is a fundamental form of reasoning and that it is justified through rational reflection.

A second way that one might respond to the Truth Demand without appealing to external world beliefs is similar to the inductive justification of induction that is sometimes put forward. James Van Cleve (1984) offers the following argument as a way of justifying induction:

\(^{203}\) White (2005a) suggests something similar. After arguing that explanatory considerations can be used to sort good and bad non-deductive inferences, White claims that inference to the best explanation may be justified by seeking reflective equilibrium with respect to our judgments concerning instances of non-deductive inference.
Argument A

Most of the inductive inferences I have drawn in the past from true premises have had true conclusions.

Hence,

The majority of all inductive inferences with true premises have true conclusions. ²⁰⁴

Van Cleve admits that it is clear that his argument in defense of induction is circular. However, he argues that it is not viciously circular because his argument is rule-circular, but not premise-circular. The latter occurs when the conclusion or a variant of the conclusion of an argument appears among the argument’s premises. The former occurs when the argument “is sanctioned by a rule of inference that one could know to be correct only if one already knew that its conclusion was true”. ²⁰⁵ Van Cleve argues that the rule circularity employed in his Argument A is not vicious. The reason that rule circularity is not vicious in Argument A is because it is not the case that one must have knowledge that the rule used in Argument A is correct in order to gain knowledge by using the argument.

Assuming that what Van Cleve says about rule circularity is plausible, his Argument A provides a schema for an argument in support of inference to the best explanation that responds to the Truth Demand. Here is such an argument:

²⁰⁴ Pg. 557

²⁰⁵ Ibid. pg. 558 See Braithwaite (1953) and Papineau (1993) for similar appeals to rule-circular arguments in defense of induction.
**Argument IBE**

The best explanation of the fact that it seems that most inferences to the best explanation have true conclusions is that most inferences to the best explanation have true conclusions.

Hence,

The majority of *all* inferences to the best explanation have true conclusions. Of course, details concerning *Argument IBE* would need to be carefully filled out before the argument could be reasonably thought to be acceptable. However, it is important to note that this inference to the best explanation justification of inference to the best explanation is similar to Van Cleve’s *Argument A* in the relevant ways. First, both arguments rely on a non-deductive rule in order for the premise to support the conclusion. In both cases the rule relied upon in the argument is the very rule that is supported in the conclusion. Second, both arguments fail to employ any premise-circularity. They are both rule-circular in the sense that Van Cleve describes.

Additionally, *Argument IBE* only appeals to facts about what *seems* to be the case. Specifically, it appeals to the fact that it seems that most inferences to the best explanation yield true conclusions. So, *Argument IBE* does not rely on any claims about facts concerning the external world. Given these facts and the similarities between *Argument A* and *Argument IBE*, it is plausible to think that if the former can provide a justification for induction, then the latter can provide a justification for inference to the best explanation. Thus, one promising way of responding to the
Truth Demand involves providing an inference to the best explanation justification of inference to the best explanation.

Given the fact that it is not unreasonable to think that the Truth Demand amounts to exotic skepticism and the fact that even if it does not there are a variety of ways of responding to it available to the supporter of the Explanationist Response, it is reasonable to think that the Explanationist Response cannot be defeated by the Truth Demand.

5.3 Conclusion

In this chapter I have examined several objections that have been made against replies to skepticism that rely on inference to the best explanation. I have argued that none of these objections pose a problem for the Explanationist Response. Given the support in favor of the Explanationist Response provided in previous chapters and the fact that it is not made less plausible by any of the objections described in this chapter, it is reasonable to conclude that the Explanationist Response is a successful response to skepticism.
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