Epistemic Norms and Permissive Rationality

by

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ABSTRACT

This dissertation consists of three essays, each of which closely relates to epistemic norms for rational doxastic states. The central issue is whether epistemic rationality is impermissive or not: For any total evidence E, is there a unique doxastic state that any possible agent with that total evidence E should take (Uniqueness), or not (Permissivism)?

“Conservatism and Uniqueness”: Conservatism is the idea that an agent’s beliefs should be stable as far as possible when she undergoes a learning experience. Uniqueness is the idea that any given body of total evidence uniquely determines what it is rational to believe. Epistemic Impartiality is the idea that you should not give special treatment to your beliefs solely because they are yours. I construe Epistemic Impartiality as a meta-principle governing epistemic norms, and argue that it is compatible with Conservatism. Then I show that if Epistemic Impartiality is correct, Conservatism and Uniqueness go together; each implies the other.

“Cognitive Decision Theory and Permissive Rationality”: In recent epistemology, philosophers have deployed a decision theoretic approach to justify various epistemic norms. A family of such accounts is known as Cognitive Decision Theory. According to Cognitive Decision Theory, rational beliefs are those with maximum expected epistemic value. How does Cognitive Decision Theory relate to the debate over permissive rationality? As one way of addressing this question, I present and assess an argument against Cognitive Decision Theory.

“Steadfastness, Deference, and Permissive Rationality”: Recently, Benjamin Levinstein has offered two interesting arguments concerning epistemic norms and
epistemic peer disagreement. In his first argument, Levinstein claims that a tension between Permissivism and steadfast attitudes in the face of epistemic peer disagreement generally leads us to conciliatory attitudes; in his second argument, he argues that, given an ‘extremely weak version of a deference principle,’ Permissivism collapses into Uniqueness. However, in this chapter, I show that both arguments fail. This result supports the following claim: we should treat steadfast attitudes and at least some versions of a deference principle as viable positions in the discussion about several types of Permissivism, because they are compatible with any type of Permissivism.
DEDICATION

To Chanse Jung and Jinsook Kim
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CHAPTER 1

INTRODUCTION

We are often faced with uncertainty about various issues from the nature of knowledge and the existence of the multiverse to the winner of the 2016 U.S. presidential election. One of the central issues in recent epistemology is whether epistemic rationality is permissive or not. Some philosophers, who endorse what I call *Uniqueness*, claim that for any total evidence \( E \), there is a unique doxastic state that every possible agent with that total evidence \( E \) should take. Other philosophers, who endorse what I call *Permissivism*, claim that for some total evidence \( E \), there are multiple doxastic states, any one of which a possible agent with that total evidence \( E \) can rationally take. This issue is closely related with the following general questions:

- We can make a distinction between interpersonal and intrapersonal versions of Uniqueness (and similarly for Permissivism): Interpersonal versions apply to different individuals; Intrapersonal versions apply to an individual’s selves at different times (time-slices of an individual, if you like). What important connections are there between these versions, and how do intrapersonal versions of Uniqueness (and similarly for Permissivism) relate to rational learning, or belief updating?

- Standard decision theory says that a rational action to perform is one with the greatest expected practical value. Recently, many philosophers have deployed a decision theoretic approach to justify various epistemic norms. A family of such
accounts has recently been called *Cognitive Decision Theory*. A rational belief, according to Cognitive Decision Theory, is one with maximum expected epistemic value—one such that your expected epistemic value for how states of the world will turn out, given your adopting it, is at least as high as that of any alternative doxastic state you might adopt. Can such an approach justify Uniqueness (or Permissivism)? Or, are some versions of Uniqueness (or Permissivism) among the fundamental epistemic norms that cognitive decision theorists implicitly assume?

- One may find herself faced with other people who share her total evidence and cognitive abilities, but have beliefs that conflict with hers. The debate over Uniqueness (and Permissivism) is closely related to the debate over the significance of such an epistemic peer disagreement. Is disagreement among epistemic peers rational? If so, how should we respond to it?

This dissertation centers on some aspects of those questions. It mainly consists of three essays, each of which forms a chapter of the dissertation: “Conservatism and Uniqueness” (chapter 1); “Cognitive Decision Theory and Permissive Rationality” (chapter 2); “Steadfastness, Deference, and Permissive Rationality” (chapter 3). It closes with a conclusion that looks toward further work (chapter 4).

In “Conservatism and Uniqueness,” I address the following question: *Conservatism* is the idea that one’s doxastic states should remain the same, absent any new relevant evidence. *Epistemic Impartiality* is the idea that for purposes of epistemic evaluation, there is no significant difference between intrapersonal and interpersonal
rationality requirements. When we understand the connections between interpersonal and intrapersonal versions of Uniqueness (and similarly for Permissivism) in a way that fits Epistemic Impartiality, what is the logical relation between Uniqueness and Conservatism? I prove that Conservatism and Uniqueness are logically equivalent. A possible objection is that Conservatism appears to be in tension with Epistemic Impartiality. That is, in consideration of various motivations for Conservatism, Conservatism appears to endorse a form of epistemic partiality towards one’s own previous doxastic state. However, I construe Epistemic Impartiality as a meta-principle governing epistemic norms, and argue that the version of the conservative idea that I have in mind fits naturally with Epistemic Impartiality, and that it is philosophically interesting to consider Conservatism on the assumption of Epistemic Impartiality.

In “Cognitive Decision Theory and Permissive Rationality,” I address the following question: How does Cognitive Decision Theory relate to the debate over Permissivism and Uniqueness? As one way of addressing this question, I present and assess an argument against Cognitive Decision Theory: On the assumption of Conservatism, the correct theory of epistemic rationality will not endorse non-conservative doxastic state shifts from one degree of belief function to another, in the absence of new evidence. There are general norms that dictate how epistemic utilities constrain the set of rational doxastic states, one of which is Epistemic Immodesty: A doxastic state should rank itself at least as highly as it ranks any other possible doxastic state. We can distinguish strict immodesty from non-strict immodesty in the following way:
**Strict Immodesty**: If a rational agent’s current degree of belief function is \( c \), then the agent should take her own degree of belief function \( c \) to uniquely maximize expected epistemic utility from the perspective of \( c \).

**Non-Strict Immodesty**: If a rational agent’s current degree of belief function is \( c \), then the agent should take her own degree of belief function \( c \) to be one of the possible degree of belief functions that maximize expected epistemic utility from the perspective of \( c \).

In some possible cases in which Non-Strict Immodesty holds, Cognitive Decision Theory endorses non-conservative doxastic state shifts, in the absence of new evidence. This seems to be an unfortunate consequence. However, I will further show that when we clearly distinguish among several versions of Permissivism/Uniqueness, the argument is not a real threat to any cognitive decision theorist. Depending on which version of Permissivism/Uniqueness a cognitive decision theorist endorses, they may avoid the argument in one of two general ways. One response appeals to the stability of beliefs over time, while the other allows the instability of beliefs over time to fit naturally with epistemic rationality.

In “Steadfastness, Deference, and Permissive Rationality,” I address the following question: **Steadfastness** is the idea that for some total evidence \( E \), if two or more maximally rational agents who share that total evidence \( E \) have different doxastic states, they can rationally retain their own doxastic states regardless of what other’s doxastic states turn out to be. **Deference** is the idea that if one knows that her initial doxastic state is not maximally rational, she should defer to any doxastic states that she thinks may be
maximally rational. Those are epistemic norms that could be applied to epistemic peer disagreement. How do Steadfastness and Defe

Let us now consider how various epistemic norms relate to the debate over permissive rationality in detail.
CHAPTER 2

CONSERVATISM AND UNIQUENESS

1 Introduction

In typical Bayesian fashion, let credences be an agent’s belief strengths in propositions.¹ Throughout, I will assume that (CF) an agent’s overall doxastic state at time \( t_1 \) can be represented as a credence function that maps any proposition \( X \) to a real number from 0 to 1; (DS) each distinct credence function represents a distinct doxastic state; all credence functions are probabilistically coherent. Now let us consider how to update credences after a learning experience.

Sometimes one’s credence in a proposition is directly changed after a learning experience. To illustrate, suppose you newly learn with certainty that \((E)\) the murder suspect, Sophie, has left her fingerprints on the dead body, and nothing else. Then your credence in \( E \) is directly updated to be 1.²

Sometimes one’s credence in a proposition is indirectly changed after a learning experience. For example, given that you newly learn \( E \) and nothing else, and that you know that \( E \) is evidentially relevant to the claim that \((K)\) Sophie is the killer, your credence in \( K \) is updated accordingly.

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¹ In this paper, I will focus on credences (or credal states) instead of beliefs (or belief states). However, I think that the main point (that, on the assumption of Impartiality, Conservatism is equivalent to Uniqueness) applies to a simple model of all-or-nothing beliefs (given an arbitrary proposition \( X \), an agent believes, disbelieves, or withholds beliefs in \( X \)) as well.

² For my purposes here, we do not need to assume credence functions are regular (strictly coherent). And we will restrict our discussion to an idealized context where forgetting is not a factor.
But sometimes one’s credence in a proposition should be unchanged even after a learning experience. For example, suppose that the learning experience directly changes your credence in $E$ from 0.2 to 1.0 and nothing else. Then how should you indirectly change your credence in the proposition that $(H)$ the number of trees in the Antarctic is even, after the learning experience? It is very intuitive in such cases to say: your credence in $H$ should remain the same after the learning experience. On this way of thinking, the following principle seems to be assumed.

**Credal Conservatism:** When a rational agent undergoes a learning experience, $E$, between $t_i$ and $t_j$, her credence in a proposition that is irrelevant to $E$ should remain the same between $t_i$ and $t_j$, and when a rational agent undergoes no learning experience between $t_i$ and $t_j$, her credence in any proposition should remain the same between $t_i$ and $t_j$ ($t_i < t_j$).

I call this ‘Credal Conservatism’ (‘Conservatism’ for short), because it implies that you are obliged to have conservative doxastic attitudes to a proposition that is irrelevant to your learning experience, and to any proposition when you undergo no learning experience.

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3 $E$ is a proposition that captures all that the agent learns between $t_i$ and $t_j$.

4 Regarding the first conjunct of Conservatism, I basically follow Park (ms). (But Park does not suggest the second conjunct.)

5 The conservative idea about doxastic attitudes is not new; it has been suggested by a number of philosophers. For example, see Christensen (1994), Foley (1982), Harman (1986), Quine (1951), and Sklar (1975). Note that there are a number of different versions of Conservatism. For instance, the strongest version of Conservatism implies that whatever an agent happens to believe, it is rational for her to retain it.
Conservatism seems to fit naturally with the claim that, in some evidential situations, there are multiple permissible credal states. To illustrate, let’s consider the following case from Meacham (2014) in which one seems to be required to have a permissive view on credal states:

“Consider an agent who has just been created *tabula rasa*. Consider her initial belief state. At first glance, it’s implausible to think that there’s a single doxastic state that she should be rationally required to have. It’s hard to see how rationality could require her to have a particular credence in (say) the proposition that there are several thousand chickens nearby. After all, what would this unique rational credence be? 0.7? 0.1? Given no evidence and no background beliefs to appeal to, how could one think that her credence is rationally required to take any one of these values?” (Meacham 2014: 1190; italics and parentheses in original)

Many deny that in such an evidential situation there is a unique doxastic state the agent should take. On this way of thinking, the following principle seems to be assumed.

**Permissivism**: For some evidence $E$, there are multiple credal states, any one of which a possible agent with total evidence $E$ can rationally take.

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As we can clearly see, the version of Conservatism that I examine in this paper is much weaker than the strongest versions.

For instance, many subjective Bayesians are among them.
Many seem to think that Conservatism is compatible with Permissivism. Roger White, for instance, expresses the point particularly clearly:

“No Proponents of Conservatism ... suggest that you are prima facie justified in maintaining your beliefs until you have a reason to abandon them. So had you drawn a different conclusion from the same evidence, you would be fully rational in continuing to hold it, at least until challenged.” 7

Lawrence Sklar makes a similar point:

“If you believe some proposition, on the basis of whatever positive warrant may accrue to it from the evidence, a priori plausibility, and so forth, it is unreasonable to cease to believe the proposition to be true merely because of the existence of, or knowledge of the existence of, alternative incompatible hypotheses whose positive warrant is no greater than that of the proposition already believed.” 8

These authors seem to agree that one’s total evidence can make it rational to have one of many permissible credal states and that someone with that total evidence can update her credences in accordance with Conservatism.

If ‘an agent’ in Permissivism ranges only over (possible) individuals, Conservatism is definitely compatible with Permissivism. To illustrate, suppose that there

8 Sklar (1975: 378).
is an evidential situation (say total evidence $E$) in which there are two permissible doxastic states, $D_1$ and $D_2$ ($D_1 \neq D_2$), at time $t$. Let’s assume that in such a situation, two rational agents, called Paul and John, have $D_1$ and $D_2$, respectively, and undergo no learning experience between $t_1$ and $t_2$. Let’s also assume that Conservatism holds here. Then, we can lay out Paul’s doxastic history and John’s between $t_1$ and $t_2$, respectively, as follows:

Figure 1

Comparison between Paul’s doxastic history and John’s doxastic history I

Paul’s doxastic history between $t_1$ and $t_2$

…………….. $D_1$………… at time $t_2$ (Only $D_1$ is permissible for Paul.)

↑

…………….. $D_1$………… at time $t_1$ ($D_1$ and $D_2$ are permissible for Paul.)

John’s doxastic history between $t_1$ and $t_2$

…………….. $D_2$………… at time $t_2$ (Only $D_2$ is permissible for John.)

↑

…………….. $D_2$………… at time $t_1$ ($D_1$ and $D_2$ are permissible for John.)
In the case under consideration, Conservatism is clearly compatible with Permissivism. At each time, for the total evidence $E$, there are two permissible doxastic states ($D_1$ and $D_2$), one of which Paul (and John) could rationally take, and both Paul and John satisfy Conservatism between $t_1$ and $t_2$.\(^9\)

However, what if ‘an agent’ in Permissivism ranges also over an agent’s selves at different times (time-slices of agents, if you like)? To put it another way, if, in determining what credences one ought to have for purposes of epistemic evaluation there is no significant difference between intrapersonal and interpersonal rationality requirements (see ‘Epistemic Impartiality’ below), is Conservatism still compatible with Permissivism? In the following sections, I will argue that on such an assumption, Conservatism is equivalent to the denial of Permissivism, and thus is incompatible with Permissivism. Some may think that it appears from the outset that Conservatism is in tension with the claim that there is no such significant difference between intrapersonal and interpersonal rationality requirements: The conservatives seem to give a certain kind of epistemic privilege to some intrapersonal rationality requirements. However, I will discuss the principles of Epistemic Impartiality and Conservatism, and argue that, while they may seem to conflict, there are significant, interesting versions of those principles that are compatible.

I will proceed as follows. In section 2, following Meacham (2014), I will suggest necessary and sufficient conditions for the denial of Permissivism and clearly define Permissivism and its denial in accordance with them. In section 3, I will suggest the

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\(^9\) Note that even though Paul at $t_1$ (and similarly for John) is permitted to have different doxastic states, Paul at $t_2$ is not. At $t_2$, however, Permissivism still holds because two different individuals are permitted to have different doxastic states.
principle of Epistemic Impartiality and briefly consider its implications and acceptability. In section 4, I will consider commitments that seem to motivate the endorsement of conservative doxastic attitudes by giving a special weight to one’s own credal states. I will show that, even if Epistemic Impartiality appears to be opposed to those commitments, the version of the conservative idea that I have in mind fits naturally with Epistemic Impartiality, and that it is philosophically interesting to consider Conservatism on the assumption of Epistemic Impartiality. In section 5, I will prove that on the assumption of Epistemic Impartiality, Conservatism is equivalent to the denial of Permissivism. Finally, in section 6, I will conclude with some brief remarks regarding the equivalence result.

Before proceeding further, however, a clarification of the sort of rationality I have in mind is in order. As do many philosophers, I think there is a distinction between epistemic reasons for believing, which mainly concern truth or accuracy of beliefs as representations of the world’s state, and practical reasons for believing, which mainly concern practical interests of beliefs as ways to one’s happiness.¹⁰ In this paper, the issue that puzzles me is not related to whether Conservatism and Permissivism are prudential principles for practical interests. My interest is in the logical relation between Conservatism and Permissivism, which are interpreted as epistemic principles.

### 2 Uniqueness and Permissivism

Let’s call the denial of Permissivism *Uniqueness*, which can be stated as follows:

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**Uniqueness**: For any evidence $E$, there is a unique credal state that any possible agent $x$ with total evidence $E$ should take.\(^{11}\)

Following Meacham (2014: 1188), we can show that Uniqueness is equivalent to the conjunction of the following two claims:

1. For any possible agent $x$ with total evidence $E$, there is only one permissible credence function for that agent.
2. The same credence functions are permissible for all possible agents $x$ who share total evidence $E$.\(^{12}\)

To see that the equivalence holds, let me start by proving that Uniqueness implies (1) and (2). Assume that Uniqueness holds. Then, (1) follows from our assumption that (CF) one’s overall credal state can be represented by a credence function. Furthermore, note that Uniqueness requires all possible agents who share total evidence $E$ to take the same credal state. Then, (2) also follows from CF.

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\(^{11}\) I’m following Feldman (2007), Meacham (2014), and White (2005) in the use of Uniqueness and Permissivism. In particular, *Uniqueness* is what Meacham (2014: 1187) calls *Evidential Uniqueness*. However, note that Meacham applies *Evidential Uniqueness* only to Bayesians who accept Conditionalization or Jeffrey Conditionalization. When applying *Uniqueness*, we do not have such a restriction here.

\(^{12}\) (1) and (2) are basically from what Meacham (2014: 1188) calls *Agent Uniqueness* and *Permission Parity*, respectively. However, note that regarding *Agent Uniqueness* and *Permission Parity*, Meacham restricts credence functions to initial credence functions (what he calls *priors functions*) that only *tabula rasa* agents (or *super babies*) can take. However, regarding (1) and (2), we do not have such a restriction here. (1) and (2) can apply to any credence function that is probabilistically coherent.
Next, we can show that (1) and (2) imply Uniqueness. To see this, assume that (1) and (2) hold. Then, it follows that there is only one permissible credence function for all possible agents who share total evidence $E$. Then, Uniqueness follows from our assumption that (DS) each distinct credence function represents a distinct credal state.\textsuperscript{13}

As we have seen, Uniqueness is equivalent to the conjunction of (1) and (2). Thus anyone who rejects either (1) or (2) (or both) would accept Permissivism and likely say that there are at least some cases where there are multiple permissible credences that \textit{tabula rasa} agents can rationally have in a proposition such as ‘there are several thousand chickens nearby.’

Now, following Meacham (2014), we can distinguish three types of Permissivism.

(i) Permissivism\textsubscript{1}: One that rejects both (1) and (2)

(ii) Permissivism\textsubscript{2}: One that rejects (1) but accepts (2)

(iii) Permissivism\textsubscript{3}: One that accepts (1) but rejects (2)

Table 1 provides illustrations of the differences: Let $E$ be the total evidence that two rational agents, called John and Paul, share at time $t$, and assume that each credence function is different from each other. Permissivism\textsubscript{1} is illustrated by the case where John and Paul have different permissible credence functions ($C_1$ and $C_2$ for John and $C_3$ and $C_4$ for Paul) and \textit{actually} have different credence functions ($C_1$ for John and $C_3$ for Paul). Permissivism\textsubscript{2} is illustrated by the case where John and Paul have the same permissible credence functions ($C_1$ and $C_2$ for John and Paul) but \textit{actually} have different credence

\textsuperscript{13} Regarding the assumptions, see section 1.
functions ($C_1$ for John and $C_2$ for Paul). Permissivism$_3$ is illustrated by the case where John and Paul have different credence functions that are uniquely permissible for John and Paul, respectively ($C_1$ for John and $C_2$ for Paul). Lastly, in contrast to Permissivism, Uniqueness is illustrated by the case where there is a unique credence function (say $C_1$) that any agent should take.

Table 1

Comparison between Permissivism$_1$, Permissivism$_2$, Permissivism$_3$, and Uniqueness

<table>
<thead>
<tr>
<th></th>
<th>Total Evidence $E$</th>
<th>Total Evidence $E$</th>
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<tbody>
<tr>
<td>John’s actual credence function; Permissible credence functions for John</td>
<td>$C_1$; $C_1$ and $C_2$</td>
<td>$C_3$; $C_3$ and $C_4$</td>
</tr>
<tr>
<td>Permissivism$_1$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissivism$_2$</td>
<td>$C_1$; $C_1$ and $C_2$</td>
<td>$C_2$; $C_1$ and $C_2$</td>
</tr>
<tr>
<td>Permissivism$_3$</td>
<td>$C_1$; $C_1$</td>
<td>$C_2$; $C_2$</td>
</tr>
<tr>
<td>Uniqueness</td>
<td>$C_1$; $C_1$</td>
<td>$C_1$; $C_1$</td>
</tr>
</tbody>
</table>

3 Epistemic Impartiality

There is the question of what the variable ‘$x$’ in (1) and (2) ranges over. Of course, as I already mentioned in section 1, it ranges over (possible) agents. The falsehood of (1), for instance, is compatible with a possible case in which the agent, Julie, who has just been created tabula rasa in France, has credence 0.55 in the proposition that ($H$) the number of trees in the Antarctic is even, and another agent, Ethan, who has also been created tabula rasa at the same time in Texas, has credence 0.47 in $H$. In other words, on the assumption
of the denial of (1), there is a possible case in which given the same total evidence, two agents rationally have different credences, respectively.

What if ‘x’ ranges over (possible) agents at specific times; time-slices of agents, if you like? Consider the following principle:

**Epistemic Impartiality**: In determining what credence functions one ought to have, for purposes of epistemic evaluation, there is no significant difference between intrapersonal and interpersonal rationality requirements.\(^{14}\)

To say that there is no significant difference between intrapersonal and interpersonal epistemic rationality requirements is to say that for every correct epistemic intrapersonal rationality constraint, there is a corresponding correct epistemic interpersonal rationality constraint that is just as compelling as the intrapersonal rationality constraint, and vice versa. Note that this constraint is a *meta*-requirement: It constrains the relationship between intrapersonal and interpersonal rationality requirements. Thus, more formally, the *meta*-requirement that we have in mind says:

**Epistemic Impartiality**: For any epistemic rationality constraint \(\mathcal{C}\),

(1) when \(\mathcal{C}\) holds for distinct individuals, \(<i_{a}, t_{k}>, \ldots, <i_{n}, t_{m}>\), \(\mathcal{C}\) ought to hold for your time slices, \(<i_{y}, t_{z}>, \ldots, <i_{y}, t_{x}>\), which evidentially correspond to \(<i_{a}, t_{k}>, \ldots, <i_{n}, t_{m}>\), respectively;

\(^{14}\) For instance, many take Conservatism, Conditionalization, and Reflection principle to be intrapersonal, and Uniqueness and Permissivism to be interpersonal.
(II) when $C$ holds for your time-slices, $<i_y, t_2>$, ..., $<i_y, t_x>$, $C$ ought to hold for distinct individuals, $<i_a, t_k>$, ..., $<i_n, t_m>$, which evidentially correspond to $<i_y, t_2>$, ..., $<i_y, t_x>$, respectively.

(Here, $i_i$ and $t_j$ refer to an agent and time, respectively.\(^{15}\))

To illustrate, let’s consider the following cases: It follows by Epistemic Impartiality\(^2\) that if the total evidence $E$ uniquely fixes what the credences of two agents (say John and Paul) who share that total evidence $E$ should be, then the same total evidence $E$ would also uniquely fix what the credences of one agent’s two selves (say John at $t_1$ and John at $t_2$) who share that total evidence $E$ should be, and vice versa.\(^{16}\) Also, it follows by Epistemic Impartiality\(^2\) that if the total evidence $E$ allows John and Paul, who share the same background information to have different credences as a rational response to $E$, the same total evidence $E$ would also allow John at $t_1$ and John at $t_2$, who share the same background information to have different credences as a rational response to $E$, and vice versa.\(^{17, 18}\) In other words, when it comes to assessing which credences two time-slice

\(^{15}\) Note that interpersonal relations hold not only for $<i_1, t_1>$ and $<i_2, t_1>$ but also for $<i_1, t_2>$ and $<i_2, t_2>$ where $i_1 \neq i_2$ and $t_1 \neq t_2$.

\(^{16}\) Here we assume that John does not obtain any more evidence but remains with the same total evidence $E$ between $t_1$ and $t_2$.

\(^{17}\) The distinction between interpersonal and intrapersonal versions of Uniqueness (and similarly for Permissivism) is not new. For instance, Kelly (2014: 303-7) clearly distinguishes versions of Uniqueness that have what he calls interpersonal import from those that lack such import (versions of Uniqueness that have only intrapersonal import). Thanks to an anonymous referee for this point.

\(^{18}\) To illustrate Epistemic Impartiality\(^2\) further, we can also consider van Fraassen (1984)’s Reflection principle, according to which, one’s current self should epistemically defer to one’s future self. Given Reflection principle is a correct epistemic intrapersonal rationality constraint, Epistemic Impartiality\(^2\) implies that one’s current self should also epistemically defer to another agent who evidentially corresponds to one’s future self.
agents ought to have, it matters what their evidence is, not whether they are *time slices of the same agent*.

Epistemic Impartiality assumes that what credences you ought to have at a time depends on your total evidence at that time. One might think, however, that what credences you ought to have at a time depends on both your evidence and your own epistemic standards at that time. The thought is that there are various epistemic values such as *accuracy*, *verisimilitude*, *informativeness*, *explanatoriness*, *simplicity*, etc. that sometimes conflict each other, and in assessing your rational credences, you must depend not only on your total evidence but also on your way of weighing epistemic values against each other. That is, when we do epistemic evaluations of an agent’s doxastic states, we should consider not only her total evidence, but how she weighs epistemic values. To illustrate, suppose that you have an epistemic standard that weighs accuracy more than informativeness. And, suppose further that your friend, Josh, has a different epistemic standard that weighs informativeness more than accuracy. Then, according to the view, for some proposition $P$, it is permissible for you to have a high credence in $P$ and for Josh to have a low credence in $P$, because you and Josh have different epistemic standards. Is this view compatible with Epistemic Impartiality? Epistemic Impartiality says nothing about this question, but I think the answer is *yes*: Let ‘$x$ epistemically corresponds to $y$ at a time’ mean that ‘$x$ and $y$ share both total evidence and epistemic

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19 Does Epistemic Impartiality consider only time-slices residing in our actual world, or in other possible worlds too? Since Epistemic Impartiality is a meta-principle, the answer is given by the first-order epistemic principles to which it applies. If the scope of a first-order interpersonal principle includes non-actual agents, Epistemic Impartiality demands that the scope of the corresponding intrapersonal principle does as well, and vice versa.
standard(s) at that time.” Then the version of Epistemic Impartiality that is compatible with the view can be stated as follows:

**Epistemic Impartiality**: For any epistemic rationality constraint $\mathcal{C}$,

(I’) when $\mathcal{C}$ holds for distinct individuals, $<i_a, t_k>, \ldots, <i_n, t_m>$, $\mathcal{C}$ ought to hold for your time slices, $<i_y, t>, \ldots, <i_y, t_x>$, which epistemically correspond to $<i_a, t_k>, \ldots, <i_n, t_m>$, respectively;

(II’) when $\mathcal{C}$ holds for your time-slices, $<i_y, t>, \ldots, <i_y, t_x>$, $\mathcal{C}$ ought to hold for distinct individuals, $<i_a, t_k>, \ldots, <i_n, t_m>$, which epistemically correspond to $<i_y, t>, \ldots, <i_y, t_x>$, respectively.

To illustrate, suppose that you have total evidence $E$ and epistemic standard(s) $ES I$ at $t_1$, both of which a different agent, Lesley at $t_2$, shares with you. Suppose further that you learn nothing but you change your epistemic standard(s) from $ES I$ to $ES II$ between $t_1$ and $t_2$ while Lesley does not. Then, on the assumption of Epistemic Impartiality, if the total evidence $E$ allows Lesley at $t_2$ and you at $t_2$, who have different epistemic standard(s), $ES I$ and $ES II$, respectively, to have different credences as a rational response to $E$, then the same total evidence $E$ would also allow you at $t_1$ and you at $t_2$, who have different epistemic standard(s), $ES I$ and $ES II$, respectively, to have different credences as a rational response to $E$, and vice versa.\(^{20}\)

\(^{20}\) It is noteworthy that, on the precise credence model that says an agent’s overall doxastic state at time $t$ should be represented as a *single* credence function at $t$, if there is no epistemically privileged unique epistemic standard, this view is incompatible with Conservatism and Uniqueness because, on the proposed view, two distinct time-slices with the same total evidence but different epistemic standards can have different credences.
Are there multiple permissible epistemic standards? Do different epistemic standards sometimes warrant different ways of weighing epistemic values? If so, we should take Epistemic Impartiality\textsubscript{3} rather than Epistemic Impartiality\textsubscript{2} to make that point clearly; if not, we may keep Epistemic Impartiality\textsubscript{2} rather than Epistemic Impartiality\textsubscript{3}. Which way should we go? In order to answer that question, we would need to give an account of the range of legitimate epistemic standards, something I do not have space here to address. But it is noteworthy that, even on the assumption of Epistemic Impartiality\textsubscript{3}, we can easily prove that Permissivism is equivalent to the denial of Conservatism, as will be shown in section 5. Thus the main point of this paper (given Epistemic Impartiality, Conservatism is equivalent to Uniqueness) still holds, even on the assumption of Epistemic Impartiality\textsubscript{3}. For simplicity, let us henceforth focus on Epistemic Impartiality\textsubscript{2} (Impartiality for short) rather than Epistemic Impartiality\textsubscript{3}.

The general idea of impartiality concerning doxastic attitudes is not new.\textsuperscript{21} In particular, Hedden (2015) and Moss (2015) accept “time-slice rationality” (what Moss calls “time-slice epistemology”) that is committed to the following two constraints:

**Synchronicity**: All rationality requirements are synchronic.

**Impartiality**: There is no significant difference between intrapersonal and interpersonal rationality requirements.

The Impartiality that I have in mind (Epistemic Impartiality\textsubscript{2}) does not imply Synchronicity. To see this, note that Impartiality is a meta-requirement: It constrains the

\textsuperscript{21} For instance, see Christensen (1991, 2000), Hedden (2015), and Moss (2015).
relationship between intrapersonal and interpersonal rationality requirements. Thus, when $C$ is a *diachronic intrapersonal* rationality requirement, Impartiality implies that there should be an *interpersonal* counterpart of $C$, which is as compelling as $C$. Note that Impartiality itself does not pass judgment on whether $C$ or its *interpersonal* counterpart is a rationality requirement.

Why accept Impartiality? Christensen (2000: 370-1) suggests that the epistemic goal of accuracy provides a reason:

“The appeal of Epistemic Impartiality lies in the objectivity of truth. Epistemic rationality aims most fundamentally at accurate representation of the world. This is an objective matter, bearing no intrinsic relation to the matter of which beliefs have belonged, or will in the future belong, to the agent.”

It is worth investigating in detail how well accuracy justifies Impartiality, but that would go beyond the scope of this paper. For my purposes here, it is enough to assume Impartiality rather than to defend it. Assuming Impartiality, we can say that the variable ‘$x$’ in Uniqueness conditions (1) and (2) ranges over *at least* ordered pairs $<i_i, t_j>$ where $i_i$ and $t_j$ refer to an agent and time, respectively.

4 Conservatism and Epistemic Impartiality

Is it philosophically interesting to consider Conservatism in conjunction with Impartiality? Some may think it is not because Conservatism appears to be in tension with Impartiality. In this section, I will respond to such a view: I will show that there is a
motivation for Conservatism that fits naturally with Epistemic Impartiality, and provide a case that, I think, shows that even in the presence of Impartiality, Conservatism is still an interesting epistemic principle.

According to Conservatism, an agent is to some extent justified in maintaining credences in virtue of the fact that she has those credences, given no relevant changes in her total evidence. But how could the fact that the agent has some credences in some measure justify her in continuing to have those credences? Some philosophers who endorse a strong dogmatic motivation for Conservatism may assert that, at least in some cases such as the stage of forming initial credences, when you happen to have some initial credences, that is all the justification you need for continuing to have them. Other philosophers who endorse a pragmatic (or energy-saving) motivation for Conservatism might assert that, other things being equal, the conservative doxastic attitude is beneficial from a pragmatic perspective because changing one’s credal states is an energy consuming process.\textsuperscript{22} Still other philosophers who endorse a learning-preserving (or evidence-preserving) motivation for Conservatism might assert that when your credences properly reflect what you have learned (or your evidence as it accumulates), in the absence of relevant changes in your evidence, the conservative doxastic attitude is required so as to preserve your learning.\textsuperscript{23}

Now, I do not have space here to give a full account of how to motivate Conservatism, but I think that we can safely say that commitments that motivate the endorsement of Conservatism are commitments that lead an agent to give special

\textsuperscript{22} See Sklar (1975).

\textsuperscript{23} See Harman (1986).
treatment to her own (previous) credal state. That is, in consideration of various motivations for Conservatism, Conservatism appears to endorse a form of epistemic partiality towards one’s own previous credal state. Thus Impartiality appears to be in tension with these motivations behind Conservatism because Impartiality implies that the fact that some credal states are yours has no independent epistemic significance.  

Impartiality is indeed opposed to some motivations for Conservatism. For instance, according to the strong dogmatic motivation for Conservatism, the consideration determining which credal states an agent would adopt gives special status to her own previous credences *simply* because they were hers in the past. This is of course incompatible with Impartiality.

What about the ‘energy-saving’ motivation? The ‘energy-saving’ motivation assumes that once a credence has become established, more cognitive effort would be required to get rid of it and then adopt a new one, than would be required just to retain it. Thus the ‘energy-saving’ motivation is in tension with Impartiality. To illustrate, suppose that there is another (possible) agent, Jim, who evidentially corresponds to your time-slice at $t_1$, and that you learn nothing between $t_1$ and $t_2$. Suppose further that at $t_2$ adopting Jim’s credences is less energy efficient than retaining your own credences from $t_1$. Then, given the ‘energy-saving’ motivation, even if there is another (possible) agent like Jim, this consideration for determining which credal states you should adopt gives special

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24 Note that, according to Impartiality, all *intrapersonal* epistemic requirements can be derived from principles which apply equally in the *interpersonal* case.
status to your own previous credences at $t_1$ simply in order to promote your practical interest in energy-saving. This is of course incompatible with (Epistemic) Impartiality.\footnote{Is ‘energy-saving’ a good motivation for a variety of Conservatism that is interpreted as an epistemic principle? I think that a necessary condition for a good motivation for Conservatism is that it provides a good epistemic reason for it. The ‘energy-saving’ motivation, however, directly provides only a practical reason to agents like us who have a limited amount of cognitive power. The ‘energy-saving’ motivation might \emph{indirectly} provide an epistemic reason for Conservatism as follows: conservatives would have more energy left to pursue truths, and thus would end up believing more truths or achieving better accuracy. (See Christensen (1994: 86) for this point.) Of course, it can \emph{indirectly} provide an epistemic reason for Conservatism only if an agent’s belief-forming process is reliable. When an agent’s belief-forming process is unreliable, even if she keeps the conservative doxastic attitudes and has more cognitive energy left to pursue truths, she could end up believing more falsehoods or achieving less accuracy.}

But more moderate motivations for Conservatism need not conflict with Impartiality. To see this, let us consider the learning-preserving motivation for Conservatism. According to the learning-preserving motivation, in the absence of relevant changes in evidence, when credences properly reflect what an agent, Jane, has learned (or her evidence as it accumulates), the consideration determining which credences Jane would adopt gives special status to her own previous credences not \emph{simply} due to the fact that she had those credences, but to the fact that her credences themselves are her repository of past learning.\footnote{In contrast to the ‘energy-saving’ motivation, I think, the ‘learning-preservation’ motivation \emph{directly} provides a good epistemic reason for conservatism, given that an agent’s credences properly reflect what the agent has learned.} Thus, on the assumption of such a moderate motivation, if there is another (possible) agent, David, whose credences also reflect what Jane has learned (or her total evidence) as properly as Jane’s credences do, it would be natural that the consideration determining which credences Jane would adopt gives special status not only to her own previous credences but also to David’s credences.\footnote{We can regard David as Jane’s epistemic peer who is as reliable as Jane is and shares total evidence with Jane at relevant time. The point is that, the learning-preserving considerations endorse credences that capture what Jane has learned, whether they are encapsulated by her past credences or by David’s credences.}

\footnote{25} \footnote{26} \footnote{27}
Note that when there is no such an agent like David, even if the consideration singles out only Jane’s previous credences, it would not violate Impartiality. That is, if your consideration relies on the only resource available to you, this constitutes no violation of Impartiality as long as there is no point at which the consideration discriminates between credal states solely on the basis of the fact that some credal state is yours. In such a case, I think, the learning-preserving motivation for Conservatism is still plausible, and, thus we can say that there are at least some acceptable versions of Conservatism that fit naturally with Impartiality.

To make that point more clear, let us consider a particular version of the learning preservation motivation drawn from the problem of the forgotten evidence. To illustrate, suppose that you have a high credence in that \((M)\) Marlon Brando was born in Omaha, Nebraska. Suppose further that, as we often fail to keep track of the evidence upon which our credences are based, you cannot now remember your evidence upon which your credence in \(M\) is based. (You just know that you underwent some reliable learning experience regarding \(M\).) In this case, it is epistemically rational to maintain your credence in \(M\) even though you forget the evidence, and Conservatism seems to be required to explain this. Now one might claim that such a particular version of ‘learning-preservation’ motivation is incompatible with Impartiality: What credence in \(M\) you ought to have depends (in part) on your forgotten evidence regarding \(M\), which your credence in \(M\) properly reflects, and this seems to require giving a certain kind of

\[28\] See Christensen (2000: 368) for similar points.

\[29\] In this paper, as mentioned in footnote 2, we restrict our discussion to an idealized context where forgetting is not a factor. To illustrate the ‘learning-preservation’ motivation more clearly, however, let us here consider that particular version motivated by the problem of the forgotten evidence.
epistemic privilege to your credence in $M$ because it is yours. However, as I already pointed out, when there are no other agents whose credences also properly reflect your forgotten evidence regarding $M$, even if the consideration determining which credences you would adopt singles out only your own previous credence in $M$, it would \textit{not} violate Impartiality. If your consideration relies on the only resource available to you, this constitutes no violation of Impartiality, given that there is \textit{no} discrimination between credences solely on the basis of the fact that some credence is yours.

The Conservatism I address in this paper is grounded in such a learning-preserving motivation. Hence even in the presence of Impartiality, I think, Conservatism is still an interesting epistemic principle.\textsuperscript{30} To illustrate this, consider the following case:

Suppose that you are an astrophysicist, and have of course a fairly extensive body of beliefs about the multiverse to which you do not give any special status just because they are yours. (Your epistemic considerations satisfy Impartiality.) At a party, you meet another astrophysicist, Bob, whose beliefs about the multiverse you have had reason to think are just as well informed as yours are. (And suppose further that, \textit{in fact}, his credences are just as well informed as yours are.) Thus, as a rational agent who has impartial epistemic attitudes, you put Bob’s beliefs on a par with yours, because it is epistemically irrelevant whose beliefs you are trying to take epistemic advantage of. Although you of course believe that Bob shares

\textsuperscript{30} For those who hold the strong dogmatic motivation for Conservatism, it might not be philosophically interesting to consider Conservatism in conjunction with Impartiality because, on the proposed version, Conservatism cannot capture the partial features that, according to them, have the independent epistemic significance. But I do not share the strong dogmatic view.
the vast majority of your beliefs about the multiverse and do not have any reason to suspect that your beliefs are defective, you think that there can be some propositions about the multiverse about which you and Bob disagree. However, you do not know which of your beliefs are contradicted by his beliefs, and do not want to trouble him by asking a lot of work-related questions. Fortunately, you have a belief-downloader, which works as follows: If you turn it on, it scans both your brain and his, until it finds some proposition(s) about which you and Bob disagree. When there is such a proposition, it then replaces your belief with that of Bob, and then stops.\(^{31}\)

Should you turn on the downloader? In the absence of reasons for thinking your previous beliefs to be defective, and in the absence of (other) partiality motivations, is a conservative attitude an epistemic desideratum to be considered in forming/maintaining one’s current beliefs? If you think we should not turn on the downloader, you have an intuition that favors Conservatism. And, in the next section, I will show that your intuition for Conservatism is closely related with Uniqueness: If you endorsement conservative attitudes for epistemic reasons, you should endorse Uniqueness as well, and vice versa.

**5 Conservatism and Uniqueness**

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\(^{31}\) Basically, this example is from Christensen (2000: 357).
The result that we want to establish here is: Given Impartiality, Conservatism is equivalent to Uniqueness. To see this, let me start by proving that Conservatism implies Uniqueness.

i) Conservatism implies Uniqueness

We can show that the denial of Uniqueness (Permissivism) implies the denial of Conservatism. Note that Permissivism is Permissivism1, Permissivism2, or Permissivism3. Thus, in order to show that Permissivism implies the denial of Conservatism, we have to prove that each kind of Permissivism implies the denial of Conservatism.

To see this, first assume that Permissivism1 holds. Because Permissivism1 rejects both (1) and (2), it follows by Permissivism1 that there is a possible case in which for some proposition \( X \), a total evidence \( E \) allows \( <i_1, t_1> \) and \( <i_2, t_1> \) to have different credences in \( X \) as a rational response to \( E \). On the assumption of Impartiality, Permissivism1 implies the intrapersonal counterpart of it (say Intra-Permissivism1) that is, according to Impartiality, as compelling as Permissivism1. By Intra-Permissivism1, we have: there is a possible case in which the same total evidence \( E \) would also allow \( <i_1, t_1> \) and \( <i_1, t_2> \) to have different credences in \( X \) as a rational response to \( E \). That is, given that \( i_1 \)'s total evidence \( E \) remains the same between \( t_1 \) and \( t_2 \), \( <i_1, t_1> \) and \( <i_1, t_2> \) may have different credences in \( X \) as a rational response to \( E \).

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32 Note that, on the versions that I have in mind, Conservatism is compatible with Impartiality without already assuming Uniqueness. To see this, note that (my version of) Impartiality is a meta-requirement that says for any epistemic intrapersonal rationality constraint, there must be an epistemic interpersonal rationality constraint that is as compelling as the intrapersonal rationality constraint, and vice versa. (The version of) Conservatism that I use here is a diachronic intrapersonal rationality requirement: it says how your new credence in \( P \) after no learning experience relevant to \( P \) should be related to your old credences in \( P \). Conservatism says nothing about how your new credence in \( P \) should be related with other agents’ credences in \( P \). Thus Conservatism is compatible with Impartiality without assuming Uniqueness.
We should, I think, accept the following:

**Remain the Same Thesis (RS):** For any rational agent \( i \), any time \( t_j, t_k \) \((t_j < t_k)\) and any proposition \( X \) and \( E \), \( i \)'s total evidence \( E \) for \( X \) remains the same between \( t_j \) and \( t_k \) if and only if either no learning experience happens to \( i \) between \( t_j \) and \( t_k \) or whatever learning experience does happen between \( t_j \) and \( t_k \) is irrelevant to \( X \).\(^{33}\)

Then, it follows from RS that there is a possible case in which no learning experience happens to \( i_1 \) between \( t_1 \) and \( t_2 \) or any learning experience between \( t_1 \) and \( t_2 \) is irrelevant to \( X \), but \( C_1(X) \neq C_2(X) \) where \( C_1 \) and \( C_2 \) refer to \( i_1 \)'s credence function at \( t_1 \) and at \( t_2 \), respectively. This is clearly the violation of Conservatism. Thus we show that, on the assumption of Impartiality, Permissivism\(_1\) implies the denial of Conservatism.

Note that in order to prove that Permissivism\(_1\) implies the denial of Conservatism, I relied on the following implication of Impartiality (IOI):

**IOI:** If \( <i_1, t_1> \) and \( <i_2, t_1> \) share total evidence \( E \) at \( t_1 \), and \( <i_1, t_1> \) and \( <i_2, t_1> \) are permitted at \( t_1 \) to have different credences \( r \) and \( s \) in \( X \), then the same credences \( r \) and \( s \) are permissible also for \( <i_1, t_1> \) and \( <i_1, t_2> \) if \( E \) is \( i_1 \)'s total evidence at \( t_1 \), at \( t_2 \) and at every instant of time between \( t_1 \) and \( t_2 \).

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\(^{33}\) Forgetting cases could be a counterexample against RS: Your total evidence for \( X \) can change if you forget some evidence even though you undergo no learning experience regarding \( X \). Here I restrict my discussion to an idealized context where forgetting is not a factor. It is worth investigating how to formulate expansions of RS to cover a less idealized context where forgetting matters, and answering the question satisfactorily should lead to interesting extensions of RS. However, I will leave that for future research.
IOI might be questioned in the following way: Even if \(<i_1, t_1>\) and \(<i_2, t_1>\) are permitted to have different credences in \(X\), \(<i_1, t_1>\) and \(<i_1, t_2>\) need not be. If \(<i_1, t_2>\) is aware of \(<i_1, t_1>\)'s credences but not the reverse, they are in different evidential situations and the credences permitted to \(<i_1, t_2>\) may not be the same as those permitted to \(<i_1, t_1>\). In particular, awareness of the credence that \(<i_1, t_1>\) had may change \(<i_1, t_2>\)'s evidential situation. But if \(<i_1, t_2>\)'s evidential situation has changed, then \(<i_1, t_1>\) and \(<i_1, t_2>\) do not share the same total evidence \(E\), as IOI supposes.\(^{34}\)

Note that from each of Permissivism\(_2\) and Permissivism\(_3\), it also follows that there is a possible case in which a total evidence \(E\) allows \(<i_1, t_1>\) and \(<i_2, t_1>\) to have different credences in \(X\) as a rational response to \(E\). Thus we can easily show that each of Permissivism\(_2\) and Permissivism\(_3\) also implies the denial of Conservatism as shown above. Since, on the assumption of Impartiality, it follows that every kind of Permissivism implies the denial of Conservatism, we can conclude that Conservatism implies Uniqueness.

ii) Uniqueness implies Conservatism

Next, we can show that the denial of Conservatism implies the denial of Uniqueness. To see this, assume that Conservatism does not hold. Then, it follows that there is a possible

\(^{34}\) Even though we see that this scenario does not undermine IOI, one might still worry that it illustrates another sort of problem, namely that consideration of believers whose evidence \(E\) remains the same over time is consideration of something that hardly ever occurs, since the agent's intervening beliefs are additional evidence. But it is hard to see why a rational believer should regard a past optional response to evidence \(E\) as new evidence constraining a present response to \(E\), when no alteration to \(E\) has occurred in the meantime.
case in which for some proposition $X$, even though either no learning experience happens to a rational individual $i_1$ or whatever learning experience does happen between $t_1$ and $t_2$ is irrelevant to $X$, her credence in $X$ is changed during that time (that is, $C_1(X) \neq C_2(X)$).

Then, by RS, it follows that $i_1$’s total evidence $E$ for $X$ remains the same between $t_1$ and $t_2$ but $C_1(X) \neq C_2(X)$. This is clearly a violation of *Intra-Uniqueness* (the intrapersonal counterpart of Uniqueness that, according to Impartiality, is as compelling as Uniqueness). That is, if Conservatism does not hold, then Intra-Uniqueness does not hold too. On the assumption of Impartiality, if Intra-Uniqueness does not hold, then Uniqueness (*Inter-Uniqueness*) does not hold either. Since, on the assumption of Impartiality, it follows that the denial of Conservatism implies the denial of Uniqueness, we can conclude that Uniqueness implies Conservatism.

To sum up, on the assumption of Impartiality that allows the variable ‘$x$’ in (1) and (2) to range over ordered pairs $<i, t>$, then by i) and ii), Conservatism is equivalent to Uniqueness.\(^\text{35}\)

### 6 Conclusion

I have shown that on the assumption of Impartiality, the rational updating of our credences is constrained by Conservatism if and only if Uniqueness holds. Thus, we can say that if, on the assumption of Impartiality, Conservatism is a compelling *epistemic*

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\(^\text{35}\) As I mentioned in footnote 3, there are a number of different versions of Conservatism. Thus, some philosophers who have something stronger in mind might not think that Conservatism is equivalent to Uniqueness. I agree. (Thanks to David Christensen for this point.) For instance, the strongest version of Conservatism says that whatever an agent happens to believe, it is rational for her to retain it, and this sort of Conservatism would not follow from Uniqueness. That version is hard to accept, but I acknowledge that there are other possible versions.
norm, this result could provide an epistemic justification for Uniqueness, or that if, on the assumption of Impartiality, Uniqueness is a compelling epistemic norm, this result could provide an epistemic justification for Conservatism.\footnote{Or if Uniqueness is questionable, then given Impartiality, Conservatism is questionable too.}

Let me close with a brief illustration of how Uniqueness provides an epistemic justification for Conservatism on the assumption of Impartiality. According to Conservatism, one is justified in continuing to retain one’s credences in the absence of a special reason not to. But why? Christensen (1994) says that there seems to be no account that succeeds in providing an epistemic justification for Conservatism. On the assumption of Impartiality, however, the equivalence of Conservatism and Uniqueness could provide such a justification. Why are we epistemically justified in continuing to retain our credences in the absence of a special reason not to? Because those credences are uniquely rational credal states in a given evidential situation. That is, on the assumption of Impartiality, our reasons for maintaining credences are exhausted by our reasons for thinking those credences are uniquely rational in a given evidential situation.
CHAPTER 3

COGNITIVE DECISION THEORY AND PERMISSIVE RATIONALITY

1 Introduction

Standard decision theory says that a rational action to perform is one with the greatest expected utility—one such that the expected practical utility for how states of the world will turn out, given your performing it, is at least as high as that of any alternative act you might perform. Recently, many philosophers have deployed a decision theoretic approach to justify epistemic norms such as Probabilism, Conditionalization, the Principal Principle, and the Principle of Indifference.³⁷ Let us call such a strategy Cognitive Decision Theory (CDT for short).³⁸ A rational doxastic state (or a rational updating policy) to adopt, according to CDT, is one with the greatest expected epistemic utility—one such that your expected epistemic utility for how states of the world will turn out, given your adopting it, is at least as high as that of any alternative doxastic state you might adopt.³⁹

One of the central issues in epistemology is whether epistemic rationality is permissive or not: Some claim that (Uniqueness) for any total evidence, there is a unique doxastic state that any agent with that total evidence should take⁴⁰; others claim that

³⁷ For instance, by resorting to a decision theoretic approach, Joyce (1998, 2009) and Leitgeb and Pettigrew (2010a) attempt to justify Probabilism; Easwaran (2013), Greaves and Wallace (2006), and Leitgeb and Pettigrew (2010b) attempt to justify Conditionalization; Pettigrew (2013) attempts to justify the Principal Principle; Pettigrew (2014) attempts to justify the Principle of Indifference.


³⁹ In section 2, I will explain expected epistemic utilities in detail. ‘A rational doxastic state’ rather than ‘the rational doxastic state’ to allow two or more of the possible doxastic states to have the same greatest expected epistemic utility.

⁴⁰ For instance, see Feldman (2007); White (2005, 2014); Christensen (2007); Levinstein (2015).
(Permissivism) for some total evidence, there are multiple doxastic states that an agent with that total evidence can take.\textsuperscript{41}

How does CDT relate to the debate over permissive rationality? As one way of addressing this question, in this paper, I will provide and assess an argument against CDT: I will assume that an epistemically rational agent always adopts a doxastic state that maximizes her expected epistemic utility, and prove that, at least in some possible cases where Non-Strict Epistemic Immodesty (described in section 3) holds, the agent who is faithfully represented by CDT can change her doxastic state, absent any new evidence. This violates Epistemic Conservatism, which says that one’s doxastic states should remain the same, absent any new evidence. This seems to be an unfortunate consequence. However, I will further show that when we clearly distinguish among several versions of Permissivism/Uniqueness, the argument is not a real threat to any cognitive decision theorist. Depending on which version of Permissivism/Uniqueness a cognitive decision theorist endorses, they may avoid the argument in one of two general ways. One response appeals to the stability of beliefs over time, while the other allows that the instability of beliefs over time fits naturally with epistemic rationality.

I will proceed as follows. Section 2 introduces the framework for CDT. Section 3, with the framework in hand, explains Expected Epistemic Utility Maximization and Epistemic Immodesty as general norms of CDT that I will assume throughout our discussion. In particular, I will make a clear distinction between Strict Epistemic Immodesty and Non-Strict Epistemic Immodesty. Section 4 provides a problematic example where an agent endorses a non-strict immodest epistemic utility function and,  

\textsuperscript{41} For instance, see Kelly (2014); Schoenfield (2014); Meacham (2014).
based on the problematic example, I will offer an argument against CDT. Section 5 discusses two available responses to the argument against CDT, those involving the rejection of Non-Strict Immodesty as a rational constraint, and those involving the rejection of Epistemic Conservatism as a rational constraint. In particular, I will focus on the former to explore how CDT relates to the debate over Permissivism/Uniqueness:

After clearly defining three types of Permissivism (what I call Permissivism1, Permissivism2, and Permissivism3, respectively), I will prove that Permissivism1 or Permissivism2 entails Non-Strict Immodesty or the denial of Expected Epistemic Utility Maximization, and that Uniqueness or Permissivism3 entails Strict Immodesty or the denial of Expected Epistemic Utility Maximization. Thus it will be shown that, given Uniqueness or Permissivism3, cognitive decision theorists would reject the argument against CDT because they would reject Non-Strict Immodesty in favor of Strict Immodesty; in contrast, given Permissivism1 or Permissivism2, cognitive decision theorists would generally reject the argument against CDT because they would reject Epistemic Conservatism. Finally, section 7 is the conclusion with some brief remarks.

2 Cognitive Decision Theory

CDT provides a framework for determining one’s rational doxastic states. The framework for the theory includes states of the world, credence (or degree of belief) functions, epistemic utilities and expected epistemic utilities. Let us briefly explicate each of these notions below.

2.1 States of the World
There is a set $S$ of mutually exclusive and jointly exhaustive possible states of the world over which an agent has a doxastic state $S$ can be thought of as a set of mutually exclusive and jointly exhaustive propositions, or as a partition of the set of possible worlds.\textsuperscript{42,43} The specificity of $S$ will determine how fine-grained our distinctions among doxastic states can be.

### 2.2 Degree of Belief Functions

It is assumed that, in CDT, an agent’s doxastic state can be represented by some degree of belief function $c$ from a set of possible states of the world, $S$, to the real numbers $R$.\textsuperscript{44} Throughout, let $C_S$ be a set of degree of belief functions from $S$ to the real numbers $R$.\textsuperscript{45}

### 2.3 Epistemic Utility

Given a state of the world and an action, a practical utility is a practical desirability of the outcome of performing that action when that state of the world in fact obtains. An epistemic utility is the epistemic counterpart of that practical utility: Given a state of the

\textsuperscript{42} What I aim to show does not depend on whether $S$ is finite or infinite. For simplicity, however, we will assume that $S$ is finite. Nothing will hinge on this restriction.

\textsuperscript{43} I use the set-theoretic notation and syntactic notation interchangeably throughout, depending on which seems more stylistically convenient.

\textsuperscript{44} Here we do not have to assume that the agent’s doxastic state should always be modeled by a single degree of belief function. For instance, when the agent’s total evidence is unspecific, her doxastic state might be represented by a set of degree of belief functions. Many different ways of representing doxastic states could be allowed—so long as there is some way of (precisely or imprecisely) quantifying expected epistemic utilities to maximize them. For simplicity, however, we will assume that the agent’s doxastic states are modeled by a single degree of belief function. Nothing will hinge on this restriction either.

\textsuperscript{45} I do not assume Probabilism that says that rational degrees of belief functions are probabilistically coherent. Thus $C_S$ may contain elements that are probabilistically incoherent.
world and a doxastic state, an *epistemic* utility is a purely *epistemic desirability* of adopting that doxastic state when that state of the world in fact obtains. An epistemic utility is concerned with epistemically desirable values, which, many think, include *accuracy*, *informativeness*, *simplicity*, and *verisimilitude*. It would require a substantial philosophical investigation to give a full account of the epistemic values, and there could be various views on what the epistemic values are. However, what I aim to show is compatible with *any* view on the epistemic values—so long as there is a way of quantifying epistemic utilities.

It is assumed that, in *CDT*, an epistemic utility can be represented by some epistemic utility function $u$ from pairs in $C_S \times S$ to the real numbers $R$.\footnote{Here we do not have to assume that an epistemic utility of an epistemic state should always be modeled by a *single* utility function. For instance, if, given the epistemic state, there are pairs of epistemic values that are *incommensurable*, the epistemic utility of the epistemic state might be represented by the *set* of epistemic utility functions that indicates a range of *possible* epistemic utilities for the epistemic state. Many different ways of representing epistemic utilities could be allowed—so long as there is some way of (precisely or imprecisely) quantifying expected epistemic utilities to maximize them. For simplicity, however, we will assume that the agent’s epistemic utilities are modeled by a *single* epistemic utility function.} For instance, $u(c, s)$ refers to some real number that represents the epistemic utility of the doxastic state $c$ when $s$ in fact obtains; $u(c_1, s_1) > u(c_2, s_1)$ means that adopting $c_1$ is strictly better than adopting $c_2$ when $s_1$ in fact obtains; and $u(c_1, s_2) = u(c_2, s_2)$ means that adopting $c_1$ is no better than adopting $c_2$, and vice versa, when $s_2$ in fact obtains, from the purely *epistemic* perspective.

There are some conditions that constrain epistemic utility functions. For instance, many believe that an epistemic utility function should satisfy *Extensionality*, which says that the epistemic utility is a function of nothing other than the truth values of $s \in S$ and...
degrees of belief that \( c \in C_S \) assigns to the states of the world.\(^{47}\) \textit{Extensionality} is not necessarily required for my purposes,\(^{48}\) but the following two conditions are required:

\begin{quote}
\textit{Quantifiability:} All epistemic utilities can be numerically measured.

\textit{Continuity:} When two epistemic states are sufficiently similar, then their epistemic utilities are also similar.\(^{49}\)
\end{quote}

I do not have space here to give a full account of \textit{Quantifiability} and \textit{Continuity}, but for my purposes in this paper, it is enough to assume them rather to justify them, as many cognitive decision theorists do.

\subsection*{2.4 Expected Epistemic Utilities}

An expected \textit{epistemic} utility of adopting a doxastic state \( x \in C_S \) with respect to \( c \in C_S \) is given by weighting \( x \)'s epistemic utility at each state of the world \( s \in S \) by the degree of belief that \( c \) assigns to that state of the world, and summing: \( EU_c(x) = \sum_{s \in S} c(s)u(x, s) \). An agent’s expected \textit{epistemic} utility of a doxastic state \( x \in C_S \) is an estimation of \( x \)'s \textit{epistemic} utility from the perspective of the agent’s current doxastic state.

\footnote{See Joyce (1998: 591).}

\footnote{For instance, if the epistemic utility is in part based on informativeness, it cannot be extensional because informativeness of an epistemic state is not extensional. However, what I aim to show applies to any version of \textit{CDT} in which \textit{Extensionality} holds as well.}

\footnote{Note that these conditions assume \textit{Externalism} that says “the value of a cognitive state depends on features external to the cognitive state” such as which state of the world in fact obtains. See Oddie (1997: 537) for this point.}
3 Two General Norms for Cognitive Decision Theory

Among the general norms that may dictate how epistemic utilities constrain the set of rational doxastic states, two are relevant for my purposes: *Expected Epistemic Utility Maximization* and *Epistemic Immodesty*.

3.1 Expected Epistemic Utility Maximization

It is *very intuitive* to say: An agent ought to adopt a doxastic state that has the highest expected *epistemic* utility of all possible doxastic states with respect to the agent’s current doxastic state. More formally, with the framework for *CDT* in hand, where $M_c$ is the set of degree of belief functions that maximize epistemic utility with respect to the agent’s current doxastic state $c$, the norm that I have in mind holds:

**Expected Epistemic Utility Maximization**: Given an agent’s degree of belief function $c \in C_S$, let $M_c \subseteq C_S$ be such that, for all $x, y \in M_c$ and for all $z \in C_S \sim M_c$, $EU_c(x) = EU_c(y)$ and $EU_c(x) > EU_c(z)$. The agent *should* adopt a member of $M_c$ and *could* adopt *any* member of $M_c$.

Note that, given *Expected Epistemic Utility Maximization* (*Maximization* for short), when $M_c$ is a *non-empty* and *non-singleton* set, an agent who holds a degree of belief function $c$ would satisfy it, as long as the agent adopts *any* member of $M_c$.

3.2 Epistemic Immodesty

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50 The notation $C_S \sim M_c$ denotes the set of elements of $C_S$ that are not in $M_c$. 

It is also very intuitive to say: If an agent is epistemically rational, out of all of the possible doxastic states she could adopt, the agent has the best one from the perspective of her doxastic state. More formally, with the framework for CDT in hand, the norm that I have in mind holds:

**Epistemic Immodesty**: For all \( x \in C_S \), if a rational agent’s current degree of belief function is \( x \), then the agent should take her own degrees of belief, \( x \), to maximize expected epistemic utility. In other words, \( M_x \) contains \( x \).

Let us call the denial of Epistemic Immodesty Epistemic Modesty. In this paper, though this might not be uncontroversial,\(^{51}\) I will assume that Epistemic Modesty is not rational. I think that this assumption is plausible because when an agent adopts a modest doxastic state, as Joyce (2009: 277) points out,

“She has a prima facie epistemic reason, grounded in her beliefs, to think that she should not be relying on those very beliefs. This is a probabilistic version of Moore’s paradox. Just as a rational person cannot fully believe ‘\( X \)’ but I don’t believe \( X \),’ so a person cannot rationally hold a set of credences that require her to estimate that some other set has higher epistemic utility. The modest person is always in this pathological position: her beliefs undermine themselves.”

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\(^{51}\) For instance, Christensen (2013) and Lasonen-Aarnio (2014) argue that sorts of epistemic modesty are compatible with epistemic rationality. However, I am not sure that their versions of epistemic modesty are same as what I take to be Epistemic Modesty here.
It is noteworthy that, regarding *Epistemic Immodesty*, we can make a distinction as follows:

**Strict Immodesty**: For all \( x \in C_S \), if a rational agent’s current credence function is \( x \), then the agent should take her own degree of belief function to *uniquely* maximize expected epistemic utility. That is, \( M_x \) contains only \( x \).

**Non-Strict Immodesty**: For all \( x \in C_S \), if a rational agent’s current credence function is \( x \), then the agent should take her own degree of belief function to be a member of \( M_x \) that *possibly* contains other degree of belief functions too. That is, \( M_x \) contains \( x \) and *possibly* other degrees of belief functions too.\(^{52,53}\)

Given Strict Immodesty, for all \( x \in C_S \), when an agent’s current credence function is \( x \), for any \( y \in C_S \) \((\neq y)\), \( EU_x (x) > EU_x (y) \). On the other hand, given Non-Strict Immodesty, for all \( x \in C_S \), when an agent’s current credence function is \( x \), for any \( y \in C_S \) \((\neq y)\), \( EU_x (x) \geq EU_x (y) \).

Before proceeding further, let us briefly consider the general question that *cognitive decision theorists* often face: Are cognitive decisions really decisions? As opposed to our actions, our epistemic states are *not* voluntary: they are not subject to our (direct) control. Thus one might claim that it is inappropriate to apply the decision

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\(^{52}\) Some philosophers endorse *Strict Immodesty* but reject *Non-Strict Immodesty*. For example, see Joyce (2009); Oddie (1997); Gibbard (2007). And, as far as I know, no philosopher endorses *Non-Strict Immodesty* but rejects *Strict Immodesty*.

\(^{53}\) Note that, when an agent’s degrees of belief function is \( x \), *Strict/Non-Strict Immodesty* constrains the membership of \( M_x \), while Maximization says that the agent should adopt a member of \( M_x \) and could adopt any member of \( M_x \).
theoretic approach to epistemic rationality. In response to this objection, I am following Weintraub (2001) who argues as follows:

“it is better to reject altogether the assumption that voluntariness is a prerequisite for the applicability of decision-theoretic considerations. This rejection is seen to be principled once we understand more clearly their role; the kind of standard of assessment for beliefs they are supposed to provide. … Decision theory can provide a standard relative to which the rationality of beliefs is assessed, as does Bayesian confirmation theory. That it also provides a standard for assessing the rationality of action, which is voluntary, does not mean that it can only be used to this end.” (Weintraub 2001: 57; italics in original)

4 Argument against Cognitive Decision Theory

The result that we want to establish here is: Given Non-Strict Immodesty and Epistemic Conservatism, Cognitive Decision Theory is not the correct theory of epistemic rationality. Note that this result can apply to any decision theoretic approach to epistemic rationality, which assumes Quantifiability, Continuity, Expected Epistemic Utility Maximization, and Epistemic (non-strict) Immodesty: It does not depend on any particular epistemic utility functions, so long as they satisfy those constraints. Now let us start by considering the following cases:

Two Astrophysicists Case
Suppose that Brian is an astrophysicist, and has of course a fairly extensive body of degrees of belief about the multiverse that he deems best at $t_0$. In his department of physics, there is another astrophysicist, Andrei, who shares the same total evidence regarding the multiverse but disagrees with him on some issues about it at $t_0$. At $t_1$, Brian considers Andrei’s $t_0$-opinions and his own $t_0$-opinions deeply and thoroughly, and makes rational adjustments to his own accordingly. At $t_2$ (after making adjustments), however, Brian realizes that he still disagrees with Andrei on some issues about the multiverse and has a good reason to think that Andrei’s degrees of belief about the multiverse are just as epistemically good as his own are. Thus, as an epistemic utility maximizer, Brian puts Andrei’s opinions on a par with his own.

Let $S$ be a set of mutually exclusive and jointly exhaustive propositions about the multiverse over which Brian (and Andrei) has degrees of belief. And let $a_i$ and $b_i$ refer to Andrei’s and Brian’s degree of belief function at $t_i$, respectively. ($i \in \{0, 1, 2\}$.) Then we can summarize Brian’s epistemic situations as follows: $a_i, b_i \in C_S$; for all $x \in C_S \sim M_{b_2}$, $EU_{b_2} (b_2) > EU_{b_2} (x)$; $a_i, b_2 \in M_{b_2}$, and thus $EU_{b_2} (b_2) = EU_{b_2} (a_i)$.\(^{54}\) Note that at $t_2$, Brian holds a non-strictly immodest epistemic utility function.\(^{55}\)

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\(^{54}\) It is assumed that Andrei retains his degrees of belief between $t_0$ to $t_2$.

\(^{55}\) Note that when the expected accuracy is the only thing that matters to epistemic utility, it is still possible that Brian’s and Andrei’s degrees of belief are non-identical, yet have the equal expected accuracy, with respect to Brian’s epistemic perspective. To illustrate, suppose that accuracy is measured by the following function: $u(c, s) = c(s)$, which is suggested by Horwich (1982). Suppose further that $S = \{P, \sim P\}; C_S = \{<0, 1>, <1/2, 1/2>, <1, 0>\}; b_2(P) = 1/2$. Then, for any $x \in C_S$, $EU_{b_2}(x) = x(P)(2b_2(P) - 1) - (b_2(P) - 1)$. Thus, whether $a_2(P) = 1$ or $a_2(P) = 0$, $EU_{b_2}(b_2) = EU_{b_2}(a_i) = 1/2$. That is, there are some cases in which Brian’s and Andrei’s degrees of belief are non-identical, yet have the equal expected accuracy, with respect to Brian’s epistemic perspective, given some restrictions on epistemic utility functions and degrees of belief functions.
Now let us consider the following argument:

_Argument against CDT (AAC)_

P1: _Non-Strict Immodesty_ allows a rational agent to hold a non-strictly immodest epistemic utility function.

P2: Given _Expected Epistemic Utility Maximization_, for any agent who holds a non-strictly immodest epistemic utility function, doxastic state shifts from one degree of belief function to another may be rational, even in the absence of new evidence.

C1: Given _Expected Epistemic Utility Maximization_, rational agents are allowed, in the absence of new evidence, to rationally make doxastic state shifts from one degree of belief function to another. (From P1, P2)

P3: Given _Epistemic Conservatism_, in the absence of new evidence, a rational agent’s degree of belief in any proposition should remain the same.

C2: Therefore, _CDT_ is not the correct theory of epistemic rationality.⁵⁶ (From C1, P3)

_AAC_ is valid: If we accept P1, P2, and P3, we should also accept C2.⁵⁷ P2 is _uncontroversial_. For any agent who holds a non-strictly immodest epistemic utility function, when the agent currently holds degree of belief function \( x \in C_5 \), it is possible

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⁵⁶ This argument is basically the same as one given by Greaves and Wallace (2006: 630). (As Greaves and Wallace point out, Maher (1993: 179) suggests the original argument, with which Weintraub (2001) agrees.) However, even though they seem to see the possibility (see their footnote 13 (p. 629)), they apply their argument only to _modest_ epistemic utility functions.

⁵⁷ Note that _CDT_ recommends _Expected Epistemic Utility Maximization_.

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that there is another distinct degree of belief function \( y \in C_s \) such that \( x, y \in M_x \), and thus 
\( EU_x(x) = EU_x(y) \). That is, \( x \) and \( y \) are of equal and optimal expected epistemic utility from the perspective the agent in the doxastic state \( x \) itself. Given Maximization, as Greaves and Wallace point out, “when this occurs, the agent can stick to his current [degree of belief function \( x \)], but it will be equally consistent with ideal rationality if he chooses to move to [degree of belief function \( y \)] on a whim.”\(^{58}\) Note that Non-Strict Immodesty itself does not recommend the agent who currently holds degree of belief function \( x \) to move to another degree of belief function \( y \). However, given Maximization, when \( x, y \in M_x \), moving to another degree of belief function \( y \) is as epistemically rational as sticking to the current degree of belief function \( x \). Since P2 holds, P1 and P3 are the argument’s only questionable steps.

### 5 Responses

There are only two options to reject the argument: those involving the rejection of Non-Strict Immodesty as a rational constraint, and those involving the rejection of Epistemic Conservatism as a rational constraint. As already mentioned, my main purpose of this paper is to figure out how CDT relates to the debate over Permissivism (or Uniqueness). Thus, in this section, I will focus on the former. Before addressing it in detail, however, let us briefly consider Epistemic Conservatism.

### 5.1 Non-Conservatives are sometimes rational (Rejection of P3)

\(^{58}\) Greaves and Wallace (2006: 621). Brackets are mine. See Oddie (1997: 537) for a similar point.
To illustrate Epistemic Conservatism, suppose that over a given period time you learn nothing. Then how *should* you change your degree of belief in the proposition that \((H)\) the number of polar bears in Alaska is even, after *no* learning experience? It is *very intuitive* in such a case to say: your degree of belief in \(H\) should remain the same in the absence of a learning experience. On this way of thinking, the following principle seems to be assumed:

**Epistemic Conservatism:** When a rational agent undergoes no learning experience, her degree of belief in any proposition should remain the same.  

Many philosophers seem to accept *Epistemic Conservatism* (*Conservatism* for short) by endorsing various motivations. For instance, some philosophers endorse a pragmatic motivation for Conservatism: They claim that Conservatism would be required from a *pragmatic* perspective because, other things being equal, changing one’s mind is an energy consuming process. Other philosophers endorse a learning-preserving motivation for Conservatism: They claim that Conservatism would be required from an *epistemic* perspective because, given your degrees of belief properly reflect what you have learned, conservative doxastic attitudes would preserve what you have learned. Still other philosophers, however, seem to reject Conservatism. For instance, after

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59 This is a special version of Epistemic Conservatism for an agent who learns nothing. There is, of course, a more general version. For example, see Christensen (1994), Harman (1986), and Sklar (1975).

60 See Sklar (1975).

arguing that no account has succeeded in providing an epistemic justification for
Conservatism, Christensen (2000) rejects Conservatism in favor of Epistemic Impartiality
that says “The considerations determining which beliefs it would be epistemically
rational for an agent to adopt do not give special status to any of the agent’s present
opinions on the basis of their belonging to the agent.”62

Which side should we take? I think, in many cases, it is very intuitive to have
conservative doxastic attitudes. When there is no learning experience, isn’t it irrational to
change one’s mind on a whim? It seems so, and the denial of Conservatism seems to
allow us to change our minds in such a way. However, I have no argument at this
moment for Conservatism. Thus, to those who reject Conservatism, I simply suggest the
argument against CDT from P1 and P2 to the following adjusted conclusion (subjunctive
conditional):

C3: If Conservatism were correct, Cognitive Decision Theory would not be the
correct theory of epistemic rationality. (From P1 and P2)

62 Here Christensen seems to assume that all versions of Conservatism are in tension with Epistemic
Impartiality. However, I think, some versions are compatible with Epistemic Impartiality. For instance,
according to the learning-preserving motivation for Conservatism, in the absence of relevant changes in
evidence, when credences properly reflect what you have learned (or your evidence as it accumulates), the
consideration determining which credences you would adopt gives special status to your own previous
credences not simply due to the fact that you had those credences, but to the fact that your credences
themselves are your repository of past learning. Thus, on the assumption of such a moderate motivation, if
there is another (possible) agent whose credences also reflect what you have learned (or your total
evidence) as properly as your credences do, it would be natural that the consideration determining which
credences you would adopt gives special status not only to your own previous credences but also to her
credences. Note that when there is no such an agent, even if the consideration gives special status only to
your previous credences, it would not violate Epistemic Impartiality. That is, if your consideration relies on
the only resource available to you, this constitutes no violation of Epistemic Impartiality as long as there is
no point at which the consideration discriminates between credal states solely on the basis of the fact that
some credal state is yours.
The argument is still valid. Thus anyone who accepts P1 and P2 should also accept C3. However, I do not think that this conclusion is strong enough to be a real threat to any cognitive decision theorist who rejects Conservatism.

5.2 Non-Strict Immodesty is not rational (Rejection of P1)

Now let us consider P1: Non-Strict Immodesty allows a rational agent to hold a non-strictly immodest epistemic utility function. Is Non-Strict Immodesty a rational constraint? Whether we should accept P1 or not depends on whether there are some cases like Two Astrophysicists in which there is more than one rational doxastic state to a given total evidence from one’s epistemic perspective. In fact, it will turn out that there are very intricate connections between the debate over Strict/Non-Strict Immodesty and the debate over Permissivism/Uniqueness. To see this, let me first briefly explain what Permissivism and Uniqueness are.

5.2.1 Permissivism and Uniqueness

Permissivism says that for some evidence $E$, there are multiple doxastic states, any one of which a possible agent with that total evidence $E$ can rationally take. Uniqueness is the denial of Permissivism. As Meacham (2014: 1188) points out, Uniqueness is equivalent to the conjunction of the following two claims:

1. (Agent Uniqueness) For any possible agent with a total evidence $E$, there is only one permissible degree of belief function for that agent.
(2) (Permission Parity) The same degree of belief functions are permissible for all possible agents who share a total evidence $E$.\textsuperscript{63,64}

Thus, following Meacham (2014), we can distinguish three types of \textit{Permissivism}.

\textit{Permissivism}_1: One that rejects both (1) and (2)

\textit{Permissivism}_2: One that rejects (1) but accepts (2)

\textit{Permissivism}_3: One that accepts (1) but rejects (2)

Note that \textit{Permissivism}_1, \textit{Permissivism}_2, \textit{Permissivism}_3, and \textit{Uniqueness} are mutually exclusive and collectively exhaustive.

It is noteworthy that, according to \textit{Permissivism}_3 or \textit{Uniqueness}, no total evidence is permissive with respect to the range of rational doxastic states open to any \textit{particular} individual, while, according to \textit{Permissivism}_1 or \textit{Permissivism}_2, some total evidence is permissive with respect to that. Thus, even though \textit{Permissivism}_1, \textit{Permissivism}_2, and \textit{Permissivism}_3 are all permissive principles, there is a crucial difference between

\textsuperscript{63} I am following Feldman (2007), Meacham (2014), and White (2005) in the use of Uniqueness and Permissivism. In particular, \textit{Uniqueness} is what Meacham (2014: 1187) calls \textit{Evidential Uniqueness}, which implies that the evidence \textit{alone} suffices to fix what a rational credal state is. There could be other versions of Uniqueness (and Permissivism). For my purposes in this paper, a different version of Uniqueness (and Permissivism) could be allowed—so long as there are counterparts of \textit{Agent Uniqueness} and \textit{Permission Parity}, respectively, for that version.

\textsuperscript{64} For the proof of the equivalence, see Meacham (2014: 1188). Note that regarding \textit{Agent Uniqueness} and \textit{Permission Parity}, Meacham restricts degree of belief functions to \textit{priors functions} that only \textit{tabula rasa} agents who satisfy two Bayesian normative constraints (Probabilism and Conditionalization) can take. However, regarding (1) and (2), we do not have such a restriction here: \textit{Agent Uniqueness} and \textit{Permission Parity} can apply to any degree of belief function, without assuming the Bayesian normative constraints.
Permissivism\textsubscript{1} (or Permissivism\textsubscript{2}) and Permissivism\textsubscript{3}: Permissivism\textsubscript{1} and Permissivism\textsubscript{2} appeal to the following two permissive intuitions:

Permissive Intuition 1: There are evidential situations in which two different agents can rationally adopt different beliefs.

Permissive Intuition 2: There are evidential situations in which a particular agent can rationally adopt a range of different beliefs.\textsuperscript{65}

In contrast, Permissivism\textsubscript{3} appeals only to Permissive Intuition 1.

5.2.2 Strict/Non-Strict Immodesty and Impermissive/Permissive Rationality

We can prove that Permissivism\textsubscript{1} or Permissivism\textsubscript{2} entails Non-Strict Immodesty or the denial of Maximization, and that Uniqueness or Permissivism\textsubscript{3} entails Strict Immodesty or the denial of Maximization. To see this, let me start by proving that Strict Immodesty and Maximization entail Permissivism\textsubscript{3} or Uniqueness. Note that Strict Immodesty says that, for all $x \in C_S$, if a rational agent’s current degree of belief function is $x$, then $M_x=\{x\}$.

Thus, assuming Strict Immodesty and Maximization, given a total evidence $E$, if an agent, $A$, who holds a strictly immodest epistemic utility function has degree of belief function $x$, there is a unique rational epistemic state, $x$, that $A$ with the total evidence $E$ should take. And, assuming Strict Immodesty and Maximization, given the same total evidence $E$, if another agent, $B$, who also holds a strictly immodest epistemic utility function has degree of belief function $y$, there is a unique rational epistemic state, $y$, that $B$ with the

\textsuperscript{65} The distinction between two permissive intuitions is from Meacham (2014: 1190).
total evidence $E$ should take. It is a logical truth that, for every $E, x=y$, or, for some $E$, $x \neq y$. If, for every $E, x=y$, Uniqueness follows. On the other hand, if, for some $E, x \neq y$, Permissivism$_3$ follows. Thus we have shown that Strict Immodesty and Maximization entail Uniqueness or Permissivism$_3$. Assuming that only immodest epistemic utility functions are rational, from the fact that Strict Immodesty and Maximization entail Permissivism$_3$ or Uniqueness, it follows by contraposition that Permissivism$_1$ and Permissivism$_2$ each entail Non-Strict Immodesty or the denial of Maximization.

Similarly, we can easily show that Non-Strict Immodesty and Maximization entail Permissivism$_1$ or Permissivism$_2$. Non-Strict Immodesty says that, for all $x \in \mathcal{C}_S$, if a rational agent’s current degree of belief function is $x$, then $x \in \mathcal{M}_x$ that is possibly a non-singleton. Thus, assuming Non-Strict Immodesty and Maximization, given a total evidence $E$, if an agent, $C$, who holds a non-strictly immodest epistemic utility function has degree of belief function $x$, there may be a set of multiple rational epistemic states, $\mathcal{M}_x$, anyone of which $A$ with the total evidence $E$ could rationally take. And, assuming Non-Strict Immodesty and Maximization, given the same total evidence $E$, if another agent, $D$, who also holds a non-strictly immodest epistemic utility function has degree of belief function $y$, there may be a set of multiple rational epistemic states, $\mathcal{M}_y$, anyone of which $D$ with the total evidence $E$ could rationally take. It is a logical truth that, for every

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66 Note that the reverse does not hold because, for instance, given the denial of Maximization, Non-Strict Immodesty is compatible with Uniqueness and Permissivism$_3$.

67 As already mentioned, this is not uncontroversial though.

68 Note that Permissivism$_1$, Permissivism$_2$, Permissivism$_3$, and Uniqueness are mutually exclusive and collectively exhaustive.

69 The reverse does not hold either because, for instance, given the denial of Maximization, Strict Immodesty is compatible with Permissivism$_1$ and Permissivism$_2$. 

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\( E, M_x=M_y \), or, for some \( E, M_x \neq M_y \). If, for every \( E, M_x=M_y \), Permissivism\(_2\) follows. On the other hand, if, for some \( E, M_x \neq M_y \), Permissivism\(_1\) follows. Thus, assuming that only immodest epistemic utility functions are rational, it follows by contraposition that Uniqueness or Permissivism\(_3\) entails Strict Immodesty or the denial of Maximization.

5.2.3 AAC and Permissive Rationality

To cognitive decision theorists who have an intuition that favors Permissivism\(_3\) or Uniqueness, AAC is not a real threat to CDT because they can reject P1 in favor of Strict Immodesty. For instance, they can provide the following argument for Strict Immodesty:

**Argument for Strict Immodesty**\(^{70}\)

O1: Strict Immodesty or Non-Strict Immodesty

O2: Non-Strict Immodesty

O3: Maximization

C’1: the denial of Conservatism. (From O2 and O3)

O4: Conservatism

C’2: the denial of O2 (From C’1 and O4)

C’3: Therefore, Strict Immodesty (From C2’ and O1)

Note that, as I explained above, given Maximization, Non-Strict Immodesty entails the denial of Conservatism. Thus, assuming Conservatism, in order to avoid contradiction, we should reject either O2 or O3. Cognitive decision theorists would reject O2, and hence

\(^{70}\) This argument is from Oddie (1997: 535-8).
C’3 follows. Someone who accepts Permissivism$_3$ or Uniqueness would take this strategy and reject P1 of AAC.

However, what about cognitive decision theorists who have an intuition that favors Permissivism$_1$ or Permissivism$_2$? As shown above, given Permissivism$_1$ or Permissivism$_2$, Non-Strict Immodesty or the denial of Maximization follows, and hence, to cognitive decision theorists who endorse Permissivism$_1$ or Permissivism$_2$, the conclusion of AAC (C2) appears to follow: If they accept Non-Strict Immodesty (P1), given Conservatism, C2 follows; if they reject Maximization, C2 also immediately follows because CDT recommends Maximization. Then, is AAC a real threat to those permissive cognitive decision theorists? As I will show below, it need not be, because they would generally reject Conservatism.

5.2.4 Conservatism and Permissive Rationality

Let us begin by making a distinction between what I call interpersonal impermissive import and intrapersonal impermissive import. When the principles, Agent Uniqueness and Permission Parity, only compare different individuals (‘a possible agent’ ranges only over possible individuals), they have interpersonal impermissive import. When Agent Uniqueness and Permission Parity compare an agent’s selves (or time-slices) at different times (‘a possible agent’ in ranges over an agent’s selves at different times), they have intrapersonal impermissive import. Table 2 provides another illustration of the differences between Permissivism$_1$ (or Permissivism$_2$), Permissivism$_3$, and Uniqueness in

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71 See Oddie (1997: 537).

72 I’m following Kelly (2014) in the use of interpersonal and intrapersonal import.
terms of *interpersonal and intrapersonal impermissive import*: Uniqueness has
*interpersonal* as well as *intrapersonal* impermissive import; Permissivism\textsubscript{3} has only
*intrapersonal* impermissive import and lacks *interpersonal* impermissive import; both
Permissivism\textsubscript{1} and Permissivism\textsubscript{2} lack *interpersonal* as well as *intrapersonal*
impermissive import.

Table 2

Comparison between Permissivism\textsubscript{1}, Permissivism\textsubscript{2}, Permissivism\textsubscript{3}, and Uniqueness II

<table>
<thead>
<tr>
<th></th>
<th><em>Interpersonal Impermissive Import</em></th>
<th><em>Intrapersonal Impermissive Import</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Permissivism\textsubscript{1}</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Permissivism\textsubscript{2}</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Permissivism\textsubscript{3}</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>Uniqueness</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

If a principle has *intrapersonal impermissive import*, it satisfies Conservatism. Thus
Permissivism\textsubscript{3} and Uniqueness are compatible with Conservatism.\textsuperscript{73} To illustrate, suppose
that Permissivism\textsubscript{3} holds. Note that Permissivism\textsubscript{3} is motivated by *only* Permissive
Intuitions 1(See section 5.2.1): it is permissive across individuals (*interpersonal*
permissive import) but impermissive across time-slices of any particular individual

\textsuperscript{73} As pointed out in chapter 1, on the assumption of *epistemic impartiality* that says that there are no
significant differences between intrapersonal and interpersonal rationality requirements when determining
what credal states one ought to have for purposes of epistemic evaluation, Uniqueness is equivalent to
Conservatism, and so Permissivism\textsubscript{3} is *incompatible* with Conservatism. But I do not assume epistemic
impartiality here.

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(intrapersonal impermissive import). Then there is an evidential situation (say total evidence \( E \)) in which two agents, say John and Paul, who share the total evidence \( E \) have different doxastic states, \( D_1 \) and \( D_2 \) \((D_1 \neq D_2)\), which are uniquely permissible for John and Paul, respectively \((D_1 \text{ for John and } D_2 \text{ for Paul})\). Suppose further that John and Paul with the total evidence \( E \) undergo no learning experience between \( t_1 \) and \( t_2 \). That is, \( E \) is John and Paul's total evidence at \( t_1 \), at \( t_2 \) and at every instant of time between \( t_1 \) and \( t_2 \). Then, we can lay out Paul’s doxastic history and John’s between \( t_1 \) and \( t_2 \), respectively, as follows:

Figure 2
Comparison between Paul’s doxastic history and John’s doxastic history II

Paul’s doxastic history between \( t_1 \) and \( t_2 \)

\[
\begin{align*}
\text{…………….. } & \text{D}_1\text{………… at time } t_2 \quad \text{(Only D}_1\text{ is permissible for Paul.)} \\
\uparrow & \\
\text{…………….. } & \text{D}_1\text{………… at time } t_1 \quad \text{(Only D}_1\text{ is permissible for Paul.)}
\end{align*}
\]

John’s doxastic history between \( t_1 \) and \( t_2 \)

\[
\begin{align*}
\text{…………….. } & \text{D}_2\text{………… at time } t_2 \quad \text{(Only D}_2\text{ is permissible for John.)} \\
\uparrow & \\
\text{…………….. } & \text{D}_2\text{………… at time } t_1 \quad \text{(Only D}_2\text{ is permissible for John.)}
\end{align*}
\]
At each time, Paul and John should have $D_1$ and $D_2$ respectively, and thus they naturally satisfy Conservatism between $t_1$ and $t_2$.\textsuperscript{74}

Permissivism\textsubscript{1} and Permissivism\textsubscript{2} are motivated by Permissive Intuitions 1 and 2 (See section 5.2.1): they are permissive across individuals (interpersonal permissive import) and permissive across time-slices of any particular individual (intrapersonal permissive import) as well. As just shown above, Permissive Intuitions 1 is compatible with Conservatism. However, generally, Permissive Intuition 2 is in tension with Conservatism. To see this, following Meacham (2014: 1190), let us divide Permissive Intuition 2 into two parts:

Permissive Intuition 2a: There are tabula rasa cases in which a particular agent can rationally adopt a range of different beliefs.

Permissive Intuition 2b: There are non-tabula rasa cases in which a particular agent can rationally adopt a range of different beliefs.

Of course, Permissive Intuition 2a is compatible with Conservatism because, in any case that invokes only Permissive Intuition 2a, Conservatism is vacuously satisfied, but Permissive Intuition 2b is in tension with Conservatism. To illustrate, suppose that there are two permissible initial doxastic states, $R_1$ and $R_2$ ($R_1 \neq R_2$), open to two tabula rasa agents, called Cody and Luke, at time $t_0$. Suppose further that Cody and Luke begin in initial doxastic states, $R_1$ and $R_2$, respectively, and undergo no learning experience.

\textsuperscript{74} We can easily show that Uniqueness is also compatible with Conservatism in a similar way.
between $t_0$ and $t_1$. Then, we can lay out Cody’s doxastic history and Luke’s between $t_0$ and $t_1$, respectively (see Figure 3).

In the case under consideration, at $t_0$, Permissivism$_2$ is clearly compatible with Conservatism, because Conservatism is *vacuously* satisfied. However, at $t_1$, Permissivism$_2$ is no longer compatible with Conservatism: Given Conservatism, two agents have uniquely permissible credences, respectively (R$_1$ for Cody and R$_2$ for Luke), or, if Permissivism$_2$ holds at $t_1$, Conservatism does not hold, because it is rational for the agent to change one’s doxastic state, in the absence of new evidence.

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*Figure 3*

Comparison between Cody’s doxastic history and Luke’s doxastic history

**Cody’s doxastic history between $t_0$ and $t_1**

…………….. R$_1$………… at time $t_1$  
(If Conservatism holds, only R$_1$ is permissible for Cody; if R$_1$ and R$_2$ are still permissible for Cody, Conservatism does not hold.)

↑

…………….. R$_1$………… at time $t_0$  
(R$_1$ and R$_2$ are permissible for Cody and Conservatism holds.)

**Luke’s doxastic history between $t_0$ and $t_1**

…………….. R$_2$………… at time $t_1$  
(If Conservatism holds, only R$_2$ is permissible for Luke; if R$_1$ and R$_2$ are still permissible for Luke, Conservatism does not hold.)

↑

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75 We can easily show that Permissivism$_1$ is also incompatible with Conservatism in a similar way.
In sum, Permissivism3 and Uniqueness are compatible with Conservatism; Permissivism1 and Permissivism2 are compatible or incompatible with Conservatism: to tabula rasa agents, Permissivism2 (or Permissivism1) is compatible with Conservatism, while, to non-tabula rasa agents, they are incompatible with each other.

Now let us return to our original question: Is AAC a real threat to those cognitive decision theorists who endorse Permissivism1 or Permissivism2? To tabula rasa agents who hold Permissivism1 or Permissivism2, the conclusion (C2) of AAC does not follow because, in any situation where only tabula rasa agents are located, Non-Strict Immodesty and Maximization do not entail the denial of Conservatism. (Note that in any initial (synchronic) case in which the tabula rasa agents are located, Conservatism vacuously holds.) To non-tabula rasa agents who hold Permissivism1 or Permissivism2, the conclusion (C2) of AAC does not follow because they would reject Conservatism. Of course, they should accept C3 (if Conservatism were correct, Cognitive Decision Theory would not be the correct theory of epistemic rationality), but C3 is not strong enough against CDT. Therefore, AAC is not a real threat to cognitive decision theorists who endorse Permissivism1 or Permissivism2.

To sum up, then, we have considered an argument against CDT (AAC): On the assumption of Conservatism, the correct theory of epistemic rationality will not endorse non-conservative doxastic state shifts from one degree of belief function to another, in the absence of new evidence. In Two Astrophysicists case where Non-Strict Immodesty holds,
CDT endorses non-conservative doxastic state shifts, in the absence of new evidence: It is non-conservative for Brian who currently holds degree of belief function $x$ to move to another degree of belief function $y$, in the absence of new evidence, and CDT endorses such a doxastic state shift. This seems to be an unfortunate consequence. When we clearly divide up permissive/impermissive doxastic attitudes, however, we can see that AAC is not a real threat to any cognitive decision theorist: To those who endorse Uniqueness or Permissivism$_3$, AAC is not a real threat to CDT because they would reject Non-Strict Immodesty in favor of Strict Immodesty; to those who endorse Permissivism$_1$ or Permissivism$_2$, AAC is not a real threat to CDT either because AAC could not be applied to them (when they are tabula rasa agents) or because they would reject Conservatism (when they are non-tabula rasa agents).

6 Conclusion

As I have shown above, depending on which versions of Permissivism/Uniqueness cognitive decision theorists embrace, they would respond to AAC in significantly different ways. Which one is better? At this point, I have no argument for making any alliance. However, I think we can safely say that a cognitive decision theorist who endorses Uniqueness or Permissivism$_3$ would expect more stability of beliefs over time, while a cognitive decision theorist who endorses Permissivism$_1$ or Permissivism$_2$ would allow that the possibility of changing one’s beliefs on a whim fits naturally with epistemic rationality. The latter does not fit well with my intuition. However, someone
who leans toward *Permissivism*$_1$ or *Permissivism*$_2$ may regard it as unintuitive that beliefs are required to be ‘excessively stable’.\textsuperscript{76}

\textsuperscript{76} For instance, she may claim that Conservatism is counterintuitive because, given permissive, total evidence $E$, Conservatism implies that a rational believer should regard her past optional response to evidence $E$ as a new constraint on a present response to $E$, when no alteration to $E$ has occurred in the meantime.
CHAPTER 4

STEADFASTNESS, DEFERENCE, AND PERMISSIVE RATIONALITY

1 Introduction

The following three are closely related theses, each of which is central to recent work on permissive/impermissive epistemic rationality and epistemology of disagreement:

**Steadfast**: For some total evidence $E$, if two or more (maximally) rational agents who share that total evidence $E$ have different doxastic states, they can rationally retain their own doxastic states regardless of what other’s doxastic states turn out to be. (Let’s call the denial of Steadfast *Conciliationism*.)

**Deference**: If one knows that her initial doxastic state is *not* maximally rational, she should *defer* to *any* doxastic states that she thinks may be maximally rational.

**Uniqueness**: For any total evidence $E$, there is a unique doxastic state that any possible agent with total evidence $E$ should take. (Let’s call the denial of Uniqueness *Permissivism*.)

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77 I am following Christensen (2009) in the use of Steadfast (and Conciliationism).

78 I am following Levinstein (2015) in the use of Deference.

79 I am following Feldman (2007), Meacham (2014), and White (2005) in the use of Uniqueness (and Permissivism). In particular, Uniqueness is what Meacham (2014: 1187) calls Evidential Uniqueness, which implies that the evidence *alone* suffices to fix what a rational credal state is.
How do Steadfast and Deference relate to Uniqueness (or Permissivism)? Recently, regarding this question, Levinstein (2015) offers two interesting arguments: In his first argument, Levinstein claims that a tension between Permissivism and Steadfast in the face of epistemic peer disagreement generally leads us to what he calls moderate Conciliationism, which says that “if [two agents] recognize that the other is rational and that they share the same relevant evidence, they should at least modify their credences in p when they discover they disagree”\(^{80}\); in his second argument, he argues that, given an ‘extremely weak version of a deference principle,’ Permissivism collapses into Uniqueness.

However, in this paper, I shall argue that both arguments fail as a defense of moderate Conciliationism and Uniqueness, respectively. When we clearly distinguish among several types of Permissivism (what I call Permissivism\(_1\), Permissivism\(_2\), and Permissivism\(_3\)), we can see that Permissivism fits well with Steadfast, and that, even on the assumption of the ‘extremely weak version of a deference principle,’ Permissivism does not collapse into Uniqueness. First, I will show that, even on all of the assumptions that Levinstein takes for granted throughout his arguments, both arguments fail to rule out a particular type of Permissivism (Permissivism\(_3\)); Second, in response to Levinstein’s first argument for moderate Conciliationism, I will show that, given some additional plausible assumptions, Permissivism\(_1\) and Permissivism\(_2\) are also compatible with Steadfast. Third, in response to Levinstein’s second arguments for Uniqueness, which may be seen as providing good reason to reject some types of Permissivism (Permissivism\(_1\) and Permissivism\(_2\)), I will also show that, in some permissible cases, the

\(^{80}\) Levinstein (2015: 3). The bracket is mine.
‘extremely weak version of a deference principle’ is not in tension with Permissivism1 and Permissivism2. In short, I argue that Levinstein’s two arguments fail to rule out any type of Permissivism. This result could support the following claim: we should treat Steadfast and at least some versions of a deference principle as viable positions in the discussion about several types of Permissivism, because Steadfast and the Deference principle used by Levinstein are compatible with any type of Permissivism.

I will proceed as follows. In section 2, following Meacham (2014), I will suggest necessary and sufficient conditions for Uniqueness and clearly define three types of Permissivism in accordance with them. In section 3, I will explain and criticize Levinstein’s first argument that a tension between Permissivism and Steadfast in the face of epistemic peer disagreement generally leads us to moderate Conciliationism. In section 4, I will explain and criticize Levinstein’s second argument that, given an ‘extremely weak version of a deference principle,’ Permissivism collapses into Uniqueness. In the course of criticising each of Levinstein’s arguments, I will clearly show how different types of permissivists respond to them in different ways. Finally, in section 5, I conclude with some brief remarks.

2 Permissivism and Uniqueness

As Meacham (2014: 1188) points out, Uniqueness is equivalent to the conjunction of the following two claims:

(1) (Agent Uniqueness) For any possible agent with a total evidence $E$, there is only one permissible degree of belief function for that agent.
(2) (Permission Parity) The same degree of belief functions are permissible for all possible agents who share a total evidence $E$.\textsuperscript{81, 82}

Thus, following Meacham (2014), we can distinguish three types of \textit{Permissivism}.

\textit{Permissivism}_1: One that rejects both (1) and (2)

\textit{Permissivism}_2: One that rejects (1) but accepts (2)

\textit{Permissivism}_3: One that accepts (1) but rejects (2)

It is noteworthy that, according to \textit{Permissivism}_3 or \textit{Uniqueness}, the total evidence is not permissive with respect to the range of rational doxastic states open to any \textit{particular} individual, while, according to \textit{Permissivism}_1 or \textit{Permissivism}_2, some total evidence is permissive in that way. Thus, even though \textit{Permissivism}_1, \textit{Permissivism}_2, and \textit{Permissivism}_3 are all permissive principles, there is a crucial difference between \textit{Permissivism}_1 (or \textit{Permissivism}_2) and \textit{Permissivism}_3: \textit{Permissivism}_1 and \textit{Permissivism}_2 appeal to the following two permissive intuitions:

Permission Intuition 1: There are evidential situations in which two different agents can rationally adopt different beliefs.

\textsuperscript{81} There could be other versions of \textit{Uniqueness} (and \textit{Permissivism}). For my purposes in this paper, other versions of \textit{Uniqueness} (and \textit{Permissivism}) could be allowed—so long as there are counterparts of \textit{Agent Uniqueness} and \textit{Permission Parity}, respectively, for those versions. For recent discussions of \textit{Uniqueness}/\textit{Permissivism}, see Ballantyne and Coffman (2011); Christensen (2007); Feldman (2007); Kelly (2014); Meacham (2014); Schoenfield (2014); White (2005, 2014).

\textsuperscript{82} For the proof of the equivalence, see Meacham (2014: 1188).
Permissive Intuition 2: There are evidential situations in which a particular agent can rationally adopt a range of different beliefs.\(^83\)

In contrast, Permissivism\(^3\) appeals only to Permissive Intuition 1. We turn now to Levinstein’s first argument against permissive rationality.

### 3 Levinstein’s First Argument and Responses

Each type of Permissivism denies that for any given total evidence, there is a unique credal state that every agent with that total evidence should have. Thus each type of Permissivism seems to fit Steadfast well. To illustrate, suppose that there is an evidential situation (say total evidence \(E\)) in which there are two permissible doxastic states, \(D_1\) and \(D_2\) (\(D_1 \neq D_2\)), at time \(t_1\). Suppose further that two rational agents who share the total evidence \(E\) have \(D_1\) and \(D_2\), respectively, know about each other’s opinions, and obtain no new evidence between \(t_1\) and \(t_2\). In such a situation, given any type of Permissivism, it seems rationally permissible for them to retain their doxastic states: if Permissivism\(_1\) or Permissivism\(_2\) holds, without assuming any rational updating policy that conflicts with Permissivism\(_1\) or Permissivism\(_2\),\(^84\) it is equally rational to stick to one’s current doxastic state or to move to another permissible doxastic state at \(t_2\); on the other hand, if Permissivism\(_3\) holds, it is rationally obliged to retain one’s doxastic state at \(t_2\).\(^85\)

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\(^83\) The distinction between two permissive intuitions is from Meacham (2014: 1190).

\(^84\) For instance, any conservative updating policy such as Bayesian Conditionalization is generally incompatible with Permissivism\(_1\) and Permissivism\(_2\).

\(^85\) Here I restrict my discussion to a version of Steadfast that is motivated by permissive rationality as described above. Of course, there are other motivations for Steadfast. For instance, Wedgwood (2010: 238) asserts that one should give special treatment to her own current beliefs, experiences, memories, and
However, according to Levinstein, *Permissivism* is in tension with *Steadfast*. To examine this point, following Levinstein, let’s begin by assuming that there are two rational agents, called Amy and Bill. At $t_0$, Amy knows:

1. Amy and Bill will always be perfectly rational.
2. At $t_1$, Amy and Bill will have the same total evidence, which may be permissive toward some proposition $p$.
3. Amy will update her credences by Bayesian Conditionalization.\(^{86}\)
4. At $t_2$, Amy will learn what Bill’s $t_1$-credence in $p$ was.
5. *(Steadfast)* Amy won’t revise her credence in $p$ after learning what Bill’s $t_1$-credence in $p$ is.
6. Amy will always be truth-sensitive to $p$.

At $t_0$, Amy does not know:

7. Her own credence in $p$ at $t_1$.
8. Bill’s credence in $p$ at $t_1$.
9. What evidence they will get between $t_0$ and $t_1$.

Intuitions, because they can guide her *directly* in a way that beliefs, experiences, memories, and intuitions of others cannot. Wedgwood takes such an epistemic *partiality* towards one’s own current mental states to motivate *Steadfast*. It is worth investigating in detail how well this sort of motivations justifies *Steadfast*, but that would go beyond the scope of this paper.

\(^{86}\) Note that, after $t_0$, (2) and (3) are compatible only on the assumption of *Permissivism*:\(1\): When an agent updates her credences by Conditionalization, the agent’s prior credences and her new evidence suffice to determine a uniquely rational credence for the agent at a relevant time. Since Levinstein already assumes that a particular version of *Permissivism* holds after the initial (prior) time without providing any specific reason, to anyone who endorses *Permissivism*\(1\) or *Permissivism*\(2\), Levinstein’s argument may be already question begging. However, let’s set aside this issue for now.
Let $A_t$, $B_t$, $a_t(p)$, and $b_t(p)$ be Amy’s time-slice, Bill’s time-slice, Amy’s credence in $p$ at $t$, and Bill’s credence in $p$ at $t$, respectively. Then we can lay out Levinstein’s argument for the incompatibility of Permissivism with Steadfast as follows:

Levinstein’s First Argument for the Incompatibility of Permissivism with Steadfast

P1) For all $x$, $a_0(p|a_1(p) = x) = x$. (by Reflection principle)

C1) For all $x$ and $y$, $a_0(p|a_1(p) = x, b_1(p) = y) = x$. (from P1 and (5))

C2) For all $x$ and $y$, $a_0(p|a_1(p) = x, b_1(p) \neq y) = x$. (from P1 and (5))

C3) For all $x$ and $y$, $a_0(p|b_1(p) = y, a_1(p) = x) = a_0(p|b_1(p) \neq y, a_1(p) = x)$. (from C1 and C2)

C4) For all $x$ and $y$, $a_0(b_1(p) = y|p, a_1(p) = x) = a_0(b_1(p) = y|\neg p, a_1(p) = x)$. (from C3)

P2) For some $x$ and $y$, $a_0(a_1(p) = x|p, b_1(p) = y) \neq a_0(a_1(p) = x|\neg p, b_1(p) = y)$. (from (3) and (5))

C5) Therefore, from $A_0$’s epistemic perspective, there is a strong asymmetry between $a_1(p)$ and $b_1(p)$. (from C4 and P2)

P1 follows by the Reflection principle from van Fraassen (1984), according to which, one’s current self should epistemically defer to one’s future self°7: For any $x$, when $A_0$

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°7 Why does Levinstein take the Reflection principle for granted here? Levinstein assumes that (3) Amy will update her credences by Bayesian Conditionalization, and seems to take it for granted that Bayesian Conditionalization implies the Reflection principle. But it is at least not uncontroversial whether Bayesian Conditionalization implies the Reflection principle. For instance, see Weisberg (2007) and Park (2012). However, let’s set aside this issue for now.
thinks that she may come to have credence \( x \) in \( p \) at \( t_1 \) (i.e., \( a_0(a_1(p) = x) > 0 \)), according to this version of the Reflection principle, her current credence in \( p \) should be constrained in a way that P1 describes. Since \( A_0 \) knows that her credence in \( p \) will remain the same whatever \( B_1 \)'s credence in \( p \) turns out to be, C1, C2, and C3 immediately follow. We can derive C4 from C3 by probability calculus\(^{88}\) and finally, since \( A_0 \) knows that she will always be truth-sensitive to \( p \), P2 follows.

In order to better understand what C5 says, following Levinstein (pp. 7-9), let us define basic (in)sensitivity and conditional (in)sensitivity to whether \( p \). Let an agent \( S \) at \( t_i \) be basically sensitive to whether \( p \) according to a credence function \( c \) if “[\( c \)] thinks \( \text{[S]} \)'s doxastic behavior will vary in some minimally predictable way or other depending on whether \( p \).”\(^{89}\) More formally,

Basic Sensitivity: An agent \( S_i \) is basically sensitive to whether \( p \) according to a credence function \( c \) if for some \( x \), \( c(s_i(p) = x | p) \neq c(s_i(p) = x | \neg p) \).

That is, if, from \( c \)'s perspective, \( S_i \)'s credence in \( p \) is an independently valuable source of stochastic information about whether \( p \), \( c \) regards \( S_i \) as being basically sensitive to whether \( p \); otherwise, \( S_i \) is basically insensitive to whether \( p \). That is, if, from \( c \)'s perspective, \( S_i \)'s credence in \( p \) is not an independently valuable source of stochastic

\(^{88}\) C3 says that, according to \( a_0 \), \( p \) and \( b_1(p) = y \) are conditionally (probabilistically) independent given \( a_1(p) = x \). Conditional (probabilistic) independence is symmetric. That is, for any propositions \( p, q, \) and \( r \), and probability function \( pr \), according to \( pr \), \( p \) and \( q \) are conditionally independent given \( r \) (i.e., \( pr(p | q, r) = pr(p | \neg q, r) \)) if and only if \( q \) and \( r \) are conditionally independent given \( r \) (i.e., \( pr(q | p, r) = pr(q | \neg p, r) \)). Thus it follows from C3 that \( b_1(p) = y \) and \( p \) are also conditionally independent given \( a_1(p) = x \), and that is exactly what C4 says.

\(^{89}\) Levinstein (2015: 7). The brackets are mine.
information about whether \( p \), \( c \) regards \( S_i \) as being *basically insensitive* to truth values of \( p \). More formally,

Basic Insensitivity: An agent \( S_i \) is *basically insensitive* to whether \( p \) according to a credence function \( c \) if for all \( x \), \( c(s_i(p) = x | p) = c(s_i(p) = x | \neg p) \).\(^{90}\)

With *basic (in)sensitivity* in hand, we can also define *conditional (in)sensitivity*. Let \( S_i \) be *conditionally sensitive* to whether \( p \) given \( q \) according to a credence function \( c \) if \( c \) thinks \( S_i \)’s credence in \( p \) will vary in some minimally predictable way or other depending on whether \( p \) given \( q \). More formally,

Conditional Sensitivity: An agent \( S_i \) is *conditionally sensitive* to whether \( p \) given \( q \) according to a credence function \( c \) if for some \( x \), \( c(s_i(p) = x | p, q) \neq c(s_i(p) = x | \neg p, q) \).

That is, if, from \( c \)’s perspective, \( S_i \)’s credence in \( p \) is an independently valuable source of *stochastic* information about whether \( p \) given \( q \), \( c \) regards \( S_i \) as being *conditionally sensitive* to whether \( p \) given \( q \); otherwise, \( S_i \) is *conditionally insensitive* to truth values of \( p \). That is, if, from \( c \)’s perspective, \( S_i \)’s credence in \( p \) is *not* an independently valuable source of *stochastic* information about whether \( p \) given \( q \), \( c \) regards \( S_i \) as being *conditionally insensitive* to whether \( p \) given \( q \). More formally,

Conditional Insensitivity: An agent \( S_i \) is *conditionally insensitive* to whether \( p \) given \( q \) according to a credence function \( c \) if for all \( x \),

\(^{90}\) Note that for all \( x \), \( c(s(p) = x | p) = c(s(p) = x | \neg p) \) is equivalent to \( c(p| s(p) = x) = c(p) \).
\[ c(s_i(p) = x | p, q) = c(s_i(p) = x \sim p, q). \]

Note that C4 says that, according to A₀, B₁ is *conditionally insensitive* to whether \( p \) given \( a_1(p) = x \). In contrast, P² says that, according to A₀, A₁ is *conditionally sensitive* to whether \( p \) given \( b_1(p) = y \). Thus, regarding *conditional sensitivity*, there is a strong *asymmetry* between A₁ and B₁ from A₀’s perspective. What does such a strong asymmetry between A₁ and B₁ stand for? From A₀’s perspective, in contrast to her own future credence in \( p \) at \( t_1 \), B₁’s credence in \( p \) does not track whether \( p \) by responding the total evidence that he gets but tracks only A₁’s credence in \( p \), which tracks whether \( p \) by responding the total evidence that A₁ gets.⁹¹ That is, as Levinstein points out “[f]rom a stochastic perspective, according to [A₀], [B₁]’s credence is just her credence with noise added.”⁹² To put it another way, from A₀’s perspective, at least regarding \( p \), \( a_1(p) \) is epistemically better than \( b_1(p) \).

*Permissivism* seems to fit naturally with *Steadfast*, but, somewhat surprisingly, Levinstein’s first argument shows that *Steadfast* implies such a strong asymmetry that seems conflict with *Permissivism*. Therefore, according to Levinstein,

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⁹¹ To see this point more clearly, note that C4 implies that A₀’s conditional credence in \( b_1(p) = y \) given \( p \) (\( a_0(b_1 = y | p) \)) is determined by \( a_0(a_1(p) = x_1 | p) \) and \( a_0(b_1(p) = y | a_1(p) = x_1) \), because \( a_0(b_1(p) = y | p) = \sum a_0(b_1(p) = y | p, a_1(p) = x_1) a_0(a_1(p) = x_1 | p) = \sum a_0(b_1(p) = y | a_1(p) = x_1) a_0(a_1(p) = x_1 | p) \), where \( x_1 \in \{x | x \text{ is A₀’s credence in } p \} \). Here’s the proof:

1) \( a_0(b_1(p) = y | p) = \sum a_0(b_1(p) = y | p, A_1(p) = x_1) a_0(A_1(p) = x_1 | p) \). (by probability calculus)

2) \( a_0(b_1(p) = y | p) = \sum a_0(b_1(p) = y | A_1(p) = x_1) a_0(A_1(p) = x_1 | p) \). (from I and C4)

In contrast, A₀’s conditional credence in \( a_1(p) = z \) given \( p \) (that is, \( a_0(b_1 = z | p) \)) is not determined by \( a_0(b_1(p) = x_1 | p) \) and \( a_0(a_1(p) = z | p, b_1(p) = x_1) \), because \( a_0(a_1(p) = z | p) = \sum a_0(a_1(p) = z | p, b_1(p) = x_1) a_0(b_1(p) = x_1 | p) \neq \sum a_0(a_1(p) = z | b_1(p) = x_1) a_0(b_1(p) = x_1 | p) \), where \( x_1 \in \{x | x \text{ is B₁’s credence in } p \} \).

⁹² Levinstein (2015: 11). The brackets are mine.
permissivists should endorse *Conciliationism* (the denial of *Steadfast*) rather than *Steadfast*. *Conciliationism* can be formulated as follows:

**Conciliationism**: For *any* evidence $E$, if two or more (equally and maximally) rational agents who share that total evidence $E$ have different doxastic states, they *cannot* rationally retain their own doxastic states regardless of what other’s doxastic states turn out to be.$^{93}$

Can we take this to be against permissive rationality? Here is an argument for *Uniqueness* that one might construct from this idea.

**Argument against Permissivism**

$L_{11}$) *Permissivism* is in tension with *Steadfast*.

$C_{11}$) Therefore, permissivists should endorse *Conciliationism*. (from $L_{11}$)

$L_{12}$) *Conciliationism* collapses into *Uniqueness*.

$C_{12}$) Therefore, *Permissivism* collapses into *Uniqueness*. (from $C_{11}$ and $L_{12}$)

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$^{93}$ There are a number of different versions of Conciliationism. For instance, the *Equal Weight View* says that in disagreements with an epistemic peer, one should always split the difference (see Elga (2007) and Christensen (2007)); the *Epistemic Value Maximization View* says that in disagreements with an epistemic peer, one should always compromise by maximizing the average of the expected epistemic values that she and her epistemic peer give to their consensus credence function (see Moss (2011)). Here Levinstein assumes the moderate version of Conciliationism that is, as explained earlier in section 1, weaker than the *Equal Weight View* and *Epistemic Value Maximization View*: In contrast to the *Equal Weight View* and *Epistemic Value Maximization View*, as Levinstein points out, the moderate version does not imply that disagreeing epistemic peers always end up with a same credence.
Does this argument give us reason to accept *Uniqueness*? It does not, because it is unsound: Both $L_1$ and $L_2$ are false. In this section, I will focus on the former. As opposed to Levinstein’s first argument, it is false: any of the types of *Permissivism* fit well with *Steadfast*. Before addressing this point in detail, however, let us briefly consider $L_2$.94

First, in some cases, $L_2$ is definitely false. Levinstein’s first argument hinges on cases in which a (maximally) rational agent recognizes that another (maximally) rational agent has a different opinion. As Levinstein (p.23) himself points out, however, even on the assumption of *Conciliationism*, “multiple responses to evidence could still be permitted so long as rational credence functions don’t know about each other.”95 Second, as Christensen (2014) points out, given that different kinds of epistemic virtue can independently apply to *Permissivism* and *Conciliationism*, respectively, even if (maximally) rational agents do know about each other’s opinions, *Conciliationism* may be compatible with *Permissivism*. For instance, it seems possible that epistemic rationality and accuracy can independently apply to *Permissivism* and *Conciliationism*, respectively.96 Thus, $L_2$ is either false or controversial: when (maximally) rational

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94 In contrast to $L_2$, many philosophers seem to endorse the reverse of $L_2$ that says *Uniqueness* commits one to *Conciliationism*. For instance, see Feldman (2007: 211-12); White (2005: 446).

95 See also Ballantyne and Coffman (2012: 663-4) and Christensen (2009: 764) for a similar point. The point can also apply to Levinstein’s second argument that will be discussed in section 4. However, I agree with Levinstein (2015: 23) that “most permissivists want rationality to be permissive even when rational functions are aware of the alternative rational choices.”

96 See Christensen (2014) for more details. Levinstein appears to acknowledge this possibility as well. See his Max & Eve case and discussions about it (pp. 24-6).
agents do not know about each other’s opinions, it is false; when (maximally) rational agents do know about each other’s opinions, it is at least controversial.97

**How Permissivism is Compatible with Steadfast**

As mentioned in section 2, anyone who rejects *Uniqueness* accepts either *Permissivism*\(_1\), *Permissivism*\(_2\), or *Permissivism*\(_3\). Let us call someone who endorses *Permissivism*\(_1\) (and similarly for *Permissivism*\(_2\) and *Permissivism*\(_3\)) a *permissivist*\(_1\). Now let’s first look at how a *permissivist*\(_3\) can endorse the rationality of *Steadfast*.

**Permissivism\(_3\) and Steadfast**

As already pointed out, *Permissivism*\(_3\) says that for some total evidence, two or more different agents could rationally have different credence functions that are uniquely permissible for each agent, respectively. Note that, according to *Permissivism*\(_3\), even though each agent is not permitted to have multiple doxastic states at a given time, *Permissivism* still holds because two or more different rational individuals are permitted to have different doxastic states at that time. Levinstein claims that, in a permissive situation, regarding *conditional sensitivity*, *Steadfast* implies a strong asymmetry between different credences in \(p\), which is in tension with *Permissivism*. However, such a strong asymmetry fits well with *Permissivism*\(_3\). To see this, note that, in Amy and Bill’s case, *Steadfast* implies that, from \(A_0\)’s epistemic perspective, \(a_1(p)\) is epistemically better than \(b_1(p)\). Thus, given \(a_1(p)\) and \(b_1(p)\), \(a_1(p)\) is *uniquely* maximally rational for \(A_0\). However,

97 Of course, Levinstein also acknowledges this point. He provides some additional reasons for that (See p. 15). And that is why he does not regard the first argument as a real threat to *Permissivism per se.*
what about B₀? Is a₁(p) also uniquely maximally rational for B₀ when B₀ knows he will not revise his credence in p at t₁ given whatever A₁’s credence in p will be? No, it is not. Steadfast implies that, from B₀’s epistemic perspective, b₁(p) is epistemically better than a₁(p). Thus, given a₁(p) and b₁(p), b₁(p) is uniquely maximally rational for B₀. Therefore, even on the assumption that Steadfast implies such a strong asymmetry, both a₁(p) and b₁(p) could be uniquely maximally rational for A₀ and B₀, respectively. That is, when two (or more) agents know that they will retain their own credences in p regardless of what other’s credences in p turn out to be, Steadfast is clearly compatible with Permissivism₃.

So, as opposed to Levinstein’s argument for L₁₁, a permissivist₃ can rationally be steadfast.

**Permissivism₁ (or Permissivism₂) and Steadfast**

Now let’s look at how a permissivist₁ and a permissivist₂ can rationally be steadfast. Permissivism₃ entails that there are (possible) evidential situations in which two different agents can rationally adopt different beliefs, but, according to Permissivism₃, no total evidence is permissive with respect to the range of rational doxastic states open to any particular individual. In contrast to Permissivism₃, Permissivism₁ and Permissivism₂ entail that there are (possible) evidential situations in which a particular agent can rationally adopt a range of different beliefs. However, according to Levinstein’s argument, Steadfast implies the strong asymmetry above, which shows that, from a particular agent’s epistemic perspective, regarding some proposition, there is uniquely maximally rational credence in that proposition for that agent. Therefore, given Steadfast, permissive rationality seems to be at most restricted to Permissivism₃. Given Steadfast, does
Permissivism necessarily collapse into Permissivisms? That is, does any steadfast agent with awareness of another possible rational doxastic state have to think that her own doxastic state is superior? Not necessarily. There are some possible cases in which Permissivism$_1$ (or Permissivism$_2$) fits well with Steadfast. Consider the following case:

The Double Epistemic Life of Véronique

Whenever there are two equally maximally rational doxastic states, the agent from Paris, Véronique, adopts the one that is more beneficial from a purely pragmatic perspective than the other. Suppose, for example, that there are two permissible doxastic states, $D_1$ and $D_2$ ($D_1 \neq D_2$), open to Véronique, but that more cognitive effort would be required of Véronique to adopt $D_2$ than would be required to adopt $D_1$. She would then adopt $D_1$ simply in order to promote her practical interest in energy-saving. 98 (And, if all permissible doxastic states are equally beneficial from the purely pragmatic perspective, Véronique would adopt one randomly.)

In Prague, there is Véronique’s epistemic doppelgänger, Weronika, who is as (epistemically) rational as Véronique is, shares total evidence with Véronique at every time, and adopts the same system of epistemic evaluation that Véronique adopts. However, whenever there are two equally (maximally) rational doxastic

98 That is, there is a pressure to adopt $D_1$ from purely practical point of view.
states, Weronika tracks only Véronique’s doxastic state and adopts one that Véronique does not adopt.99

One fine day, on Charles Bridge in Prague, Véronique meets Weronika and comes to realize that Weronika is her epistemic doppelgänger. At $t_1$, regarding some proposition $p$, Véronique regards two different credences in $p$, $x$ and $y$ ($x \neq y$), as equally rational, but she does not have any particular one at $t_1$ and is not sure yet what what credence she will have at $t_2$. And, at the same time, regarding the proposition $p$, Weronika also regards two different credences, $x$ and $y$, as equally rational, but she does not have any particular one at $t_1$ and is unsure yet what credence she will have at $t_2$ either. Although Véronique is not aware of her $t_2$-credence in $p$ and Weronika’s $t_2$-credence in $p$, she knows the following:

- At $t_2$, she will adopt one of permissible credences in $p$ ($x$ and $y$) from *purely pragmatic* considerations, and Weronika will adopt the other.
- At $t_3$, she won’t revise her credence in $p$ after learning what Weronika’s $t_2$-credence in $p$ was, in order to promote her *practical* interest in energy-saving.
- At $t_2$, she will always be truth-sensitive to $p$.

Let $V_i$, $W_i$, $v_i$, and $w_i$ be Véronique’s time-slice, Weronika’s time-slice, Véronique’s credence function and Weronika’s credence function at $t_i$, respectively. ($i \in \{1, 2\}$.) Then

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99 We can also regard Weronika as Véronique’s counterpart who is in a possible world where Véronique has $x_2$ rather than $x_1$. That is, Véronique can imagine herself in a counterfactual situation where she has $x_2$ rather than $x_1$ and compare her doxastic states in the actual situation and in the counterfactual.
we can summarize Véronique’s epistemic situation as follows in a similar way that Levinstein proposes for his first argument:

P1’’) For all \(x\) and \(y\), \(v_1(p|v_2(p) = x) = x\) (by Reflection principle)

P2’’) For all \(x\) and \(y\), \(v_1(p|v_2(p) = x, w_2(p) = y) = x\) (from P1’’ and Steadfast)

P3’’) For all \(x\) and \(y\), \(v_1(p|v_2(p) = x, w_2(p) \neq y) = y\) (from P1’’ and Steadfast)

P4’’) For all \(x\) and \(y\), \(v_1(p|v_2(p) = x, w_2(p) = y) = v_1(p|v_2(p) = x, w_2(p) \neq y)\)
(from P2’’ and P3’’)

P5’’) For all \(x\) and \(y\), \(v_1(w_2(p) = y|p, v_2(p) = x) = v_1(w_2(p) = y|\neg p, v_2(p) = x)\)
(from P4’’)

P6’’) For some \(x\) and \(y\), \(v_1(v_2(p) = x|p, w_2(p) = y) \neq v_1(v_2(p) = x|\neg p, w_2(p) = y)\)
(Because we assume Véronique knows that she will be truth-sensitive to \(p\).)

According to \(V_1\) (Véronique at \(t_1\)), \(w_2(p)\) is conditionally insensitive to truth values of \(p\) given \(v_2(p)\). \((w_2(p)\) tracks only \(v_2(p)\).) In contrast, according to \(V_1\), \(v_2(p)\) is conditionally sensitive to truth values of \(p\) given \(w_2(p)\). Thus, regarding conditional sensitivity, there is a strong asymmetry between \(v_2(p)\) and \(w_2(p)\) from \(V_1\’s\) epistemic perspective. That is, from \(V_1\’s\) epistemic perspective, in contrast to \(v_2(p), w_2(p)\) does not track whether \(p\) by responding to the total evidence that \(W_2\) gets but tracks only \(v_2(p)\), which tracks whether \(p\) by responding the total evidence that \(V_2\) gets. (And, in fact, \(w_2(p)\) does track only Véronique’s credence in \(p\) at that time.) Then, from \(V_1\’s\) purely epistemic perspective, regarding \(p\), is \(v_2(p)\) epistemically better than \(w_2(p)\)? To put it another way, from \(V_1\’s\) purely epistemic perspective, regarding \(p\), is there a uniquely maximally rational credence
in $p$ at $t_2$? It seems not. By assumption, $V_1$ regards two different credences in $p$ as equally (epistemically) maximally rational, and, at that time, she knows that she will have one of them and won’t revise her credence in $p$ after learning what Weronika’s credence in $p$ is by purely practical considerations at $t_2$. Given that there is a distinction between epistemic rationality and practical rationality, if $V_1$ knows that the asymmetry of truth-sensitivity comes only from practical considerations, $v_2(p)$ and $w_2(p)$ seem to be equally (epistemically) maximally rational credences in $p$ from $V_1$’s purely epistemic perspective.

As do many philosophers, I think there is a distinction between epistemic reasons for believing, which mainly concern truth or accuracy of beliefs as representations of the world’s state, and practical reasons for believing, which mainly concern practical interests of beliefs as ways to one’s happiness. The distinction may not be so clear in some situations. However, for my purpose here, all I need is that, at least in some cases, it is rationally permissible for an agent like Véronique to distinguish between epistemic rationality and practical rationality. *The Double Epistemic Life of Véronique*, I think, shows that when a particular agent already regards two or more credences in $p$ as equally (epistemically) maximally rational at a given time, even if, as Levinstein points out, Steadfast implies the strong asymmetry of truth-sensitivity, it is still compatible with Permissivism$_1$ and Permissivism$_2$ as epistemic principles, given Steadfast and the asymmetry spring only from the agent’s practical considerations of credences in $p$. So, as opposed to Levinstein’s argument for L$_1$, a permissivist$_1$ and a permissivist$_2$ can also rationally be steadfast.

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101 For instance, see Fantl and McGrath (2009).
To sum up, then, even if *Steadfast* implies the strong asymmetry of truth-sensitivity, *any* permissivist can rationally be steadfast. Thus, as opposed to Levinstein’s first argument for L1, *Steadfast* is compatible with taking any type of *Permissivism* seriously.

4 Levinstein’s Second Argument and Responses

Now let us look at what Levinstein takes to be his main argument for *Uniqueness*.

Following Levinstein, let $R$ be a set of maximally rational credence functions (permissible priors), and let $R(E) = \{r(\cdot|E): r \in R\}$. For his second argument, Levinstein assumes the following weak version of a deference principle for permissive rationality:

**Weak Perm Expert (WPE):** there is at least one non-maximally rational (initial) credence function that should defer to any maximally rational credence function. More formally, there is at least one credence function $c$ such that:

- if (1) $E$ is $c$’s total evidence$^{102}$,
- (2) $c(c \in R(E)) = 0$,
- (3) for all credence functions $r$, $c(r \in R) > 0$,

then, $c(\cdot|r \in R) = r(\cdot|E, r \in R)$.

WPE says that for some credence function $c$ that satisfies (1), (2), and (3), if that function learns that $r \in R$, it should switch over to $r$ after ‘letting it learn’ the total evidence $E$ and

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$^{102}$ $E$ does not contain any information about what is and is not in $R$. 79
the fact that \( r \) itself is in \( R \).\(^{103}\) According to Levinstein, given WPE, **Permissivism** collapses into **Uniqueness** as long as permissive rationality allows updating by Bayesian Conditionalization. To see this, suppose that you have a credence function \( c \) that is “a witness to the existential claim in WPE.” Levinstein’s second argument compares the results of two possible sequences of learning:

L\(_2\)1) WPE

L\(_2\)2) \( c \) will be updated by Bayesian Conditionalization

L\(_2\)3) (First sequence) For any \( r_1, r_2 \in R \), if, at \( t_1 \), \( c \) learns \( r_1 \in R \), then, by WPE, at \( t_1 \),
\[
c(\cdot| r_1 \in R) = r_1 (\cdot| E, r_1 \in R); \text{ if, at } t_2, \text{ c learns } r_2 \in R, \text{ then, by Bayesian Conditionalization,}
\]
at \( t_2 \),
\[
c(\cdot| r_1, r_2 \in R) = r_1 (\cdot| E, r_1, r_2 \in R).
\]

L\(_2\)4) (Second sequence) For any \( r_1, r_2 \in R \), if, at \( t’_1 \), \( c \) learns \( r_2 \in R \), then, by WPE, at \( t’_1 \),
\[
c(\cdot| r_2 \in R) = r_2 (\cdot| E, r_2 \in R); \text{ if, at } t’_2, \text{ c learns } r_1 \in R, \text{ then, by Bayesian Conditionalization, at } t’_2,
\]
\[
c(\cdot| r_2, r_1 \in R) = r_2 (\cdot| E, r_2, r_1 \in R).
\]
C’) Therefore, for any \( r_1, r_2 \in R \), \( r_1 (\cdot| E, r_1, r_2 \in R) = r_2 (\cdot| E, r_1, r_2 \in R).
\]

Note that \( c(\cdot| r_1, r_2 \in R) = c(\cdot| r_2, r_1 \in R) \) holds because Bayesian Conditionalization treats evidence as **commutative**: From same priors, Bayesian Conditionalization gives the same result.

\(^{103}\) Why does \( r \) need to know that it itself is in \( R \)? Elga (2013) provides some problematic cases in which the ideally rational credence function may not know that it is ideally rational. See also Levinstein (2015: 17-8) for a similar point.
final results even if the order of the new credences \((c_{t1}(r_1 \in R) = 1; c_{t2}(r_2 \in R) = 1))\) that represent the direct impact of new evidence at relevant time is changed in reverse order \((c_{t'1}(r_2 \in R) = 1; c_{t'2}(r_1 \in R) = 1)).\)

Does this argument succeed in showing that *Permissivism* collapses into *Uniqueness*? It does not. It is noteworthy that the two sequences clearly show that the second argument also hinges on cases in which rational agents know about each other: In the first sequence, at \(t_2\), \(r_1\) learns \(r_2 \in R\) with certainty; in the second sequence, at \(t_2\), \(r_2\) learns \(r_1 \in R\) with certainty. Thus premises \(L_{23}\) and \(L_{24}\) involve a lot: \(r_1\) and \(r_2\) know not only that which credence function the other one is, but also that each is maximally rational. As already pointed out in section 3, however, “multiple responses to evidence could still be permitted so long as rational credence functions don’t know about each other.”

However, I agree with Levinstein that “most permissivists want rationality to be permissive even when rational functions are aware of the alternative rational choices.” But, I will further show that, even if we restrict our discussion to cases in which rational agents know about each other, Levinstein’s second argument also fails to provide any permissivist with a reason to adopt *Uniqueness*. To see this, let’s first consider a *permissivist*’s response to the second argument.\(^{104}\)

\(^{104}\) Levinstein himself also provides and considers what he calls “permissivist’s best hope for escape” from his second argument: “There’s an important evidential difference between rational priors considered as abstract objects and rational priors realized in a particular agent’s cognitive architecture.” (p. 3) Even though it seems to be an interesting idea, it is unclear how it works and why Levinstein takes it as “permissivist’s best hope for escape”. Here and below, I provide other permissivist’ss hope for escape, which, at least in some respects, may be better than Levinstein’s response.
Permissivist’s Response to the Second Argument

Note that all Levinstein’s second argument shows is that, given WPE and Bayesian Conditionalization, your permissible credence functions (that are members of your R) collapse into one that is uniquely permissible for you. Now suppose that there is another agent, Daisy, represented by credence function d (c ≠ d), which is also “a witness to the existential claim in WPE.” Suppose further that Daisy shares the total evidence E with you, and also updates her credences by Bayesian Conditionalization. Let R’ be the set of rational credence functions for Daisy. Then, it follows that, for any r3, r4∈R’,

\[ r_3 (\cdot | E, r_3, r_4 \in R’) = r_4 (\cdot | E, r_3, r_4 \in R’) \] in a same way as above. Given R=R’, WPE, and Bayesian Conditionalization, Uniqueness appears to follow. But why should R=R’ hold?

If the same set of rational credence functions is permissible for all rational agents who share total evidence E, R=R’ would hold. However, why should we accept that?

Levinstein provides no reason. Of course, even if R ≠ R’, when R and R’ are not disjoint, WPE and Bayesian Conditionalization might still imply Uniqueness. However, if R and R’ are disjoint, WPE and Bayesian Conditionalization clearly imply Permissivism3 rather than Uniqueness. That is, when R and R’ are disjoint, for some distinct r1, r2 ∈ R, and r3, r4 ∈ R’, we can have:

\[ r_1 (\cdot | E, r_1, r_2 \in R) = r_2 (\cdot | E, r_1, r_2 \in R) ≠ r_3 (\cdot | E, r_3, r_4 \in R’) = r_4 (\cdot | E, r_3, r_4 \in R’). \]

105 This is similar with what Meacham (2014) calls Permission Parity.
Is there any epistemic reason for \( R \) and \( R' \) not to be disjoint? Levinstein provides no reason for that either. Thus Levinstein’s second argument fails to provide a permissivist a reason to adopt Uniqueness.

Note that this response still implies that, even though there are evidential situations in which two different individuals can rationally adopt different beliefs, no total evidence is permissive with respect to the range of rational doxastic states open to any particular individual. Thus, among various types of permissivists, only a permissivist can embrace this strategy. So does Levinstein’s second argument show that permissive rationality is at most restricted to Permissivism?; does permissive rationality collapse into Permissivism? It does not. I will now argue that the second argument also fails to provide either a permissivist or a permissivist with reason to adopt Uniqueness.

**Permissivist (or Permissivist)**’s Response to the Second Argument

As pointed out, Levinstein’s second argument assumes that a rational updating rule is formally commutative: From same priors, rational updating rules give the same final results even if the order of the new credences that represent the direct impact of learning experience at relevant time is changed in reverse order. Since, in his second argument, Levinstein assumes that the agent updates her credences by Bayesian Conditionalization, formal commutativity should hold. However, I think, there are some permissible cases in which formally non-commutative updating rules do not reveal an epistemic defect in those rules. And, given such cases, the conclusion of the second argument does not follow from WPE and permissive rationality. For instance, as well known, Jeffrey
Conditionalization is formally *non*-commutative\(^{106}\), and so, in some situations, from same priors, Jeffrey Conditionalization yields different outcomes if the order of one’s new credences is changed. And we can easily prove that if updating by Jeffrey Conditionalization is rationally permissible for an agent, *Permissivism*\(_1\) and *Permissivism*\(_2\) do not collapse given WPE (see appendix A).

Some may doubt that Jeffrey Conditionalization is a rationally permissible updating rule, but it is very widely accepted, and Levinstein provides no reasons for rejecting its rationality, or the rationality of any other formally noncommutative updating rule. Since Levinstein leaves open the possibility of such a case, his second argument is largely inconclusive.

*Permissivism*\(_1\) and *Permissivism*\(_2\) appeal to a permissive intuition that there are evidential situations in which a *particular* individual can rationally adopt a range of different beliefs. Some possible evidential situations, I think, indeed have such a permissive intuitive force. But I do not have the space here to go into that. For now, my conclusion is just this: Levinstein’s WPE, on its own, does not tell against *Permissivism*\(_1\) and *Permissivism*\(_2\).

To sum up, then, contrary to Levinstein’s second argument, given WPE, *Permissivism* does not collapse into *Uniqueness*: WPE and Bayesian Conditionalization is compatible with *Permissivism*.; Moreover, as long as some formally *non*-commutative updating rules are rationally permissible, at least to some particular agents, WPE leaves the open possibility for *Permissivism*, and *Permissivism*.

\(^{106}\) For instance, see Jeffrey (1983: 182-3); Döring (1999); Lange (2000).
5 Conclusion

In this paper, I have not intended to provide a conclusive argument for Permissivism. My purpose here is to show that, contrary to Levinstein’s two arguments, even on the assumptions of Steadfast and of the Deference principle used by Levinstein (WPE), it is still permissible to adopt any type of Permissivism. This result could support the following claim: we should treat Steadfast and at least some versions of a deference principle as viable positions in the discussion about several types of Permissivism, because they are compatible with any type of Permissivism. Levinstein’s first argument and a permissivist3’s response to it shows that, even when Steadfast springs from a rational agent’s (purely) epistemic considerations of doxastic states, Steadfast is still compatible with Permissivism3. Levinstein’s first argument and a permissivist1 (or a permissivist2)’s response to it (The Double Epistemic Life of Véronique) show that, when Steadfast springs from a rational agent’s purely practical considerations of doxastic states, it fits well with Permissivism1 or Permissivism2. Levinstein’s second argument and a permissivist3’s response to it show that, when a rational agent updates her credences by formally commutative updating rules such as Bayesian Conditionalization, depending on whether there are disjoint sets of rationally permissible credence functions, WPE entails Uniqueness or Permissivism3. Levinstein’s second argument and a permissivist1 (or a permissivist2)’s response to it show that, as long as some formally noncommutative updating rules are rationally permissible, WPE is still compatible with Permissivism1 and Permissivism2.
CHAPTER 5
CONCLUSION

In this dissertation, I have not intended to provide a conclusive argument for permissive rationality or impermissive rationality. My purpose here is to show how various epistemic norms relate to permissive rationality or impermissive rationality. Chapter 2 shows that, on the assumption of Epistemic Impartiality, Conservatism is equivalent to Uniqueness. Chapter 3 shows how Strict/Non-Strict Immodesty and Expected Epistemic Utility Maximization logically relate to Permissivism and Uniqueness. Chapter 4 shows that we should treat Steadfastness and at least some versions of a deference principle as viable positions in the discussion about several types of Permissivism, because they are compatible with any type of Permissivism.

I conclude with four open questions that I leave for future research.

(1) Is there a compelling epistemic reason for Conservatism? In particular, when expected accuracy is the only thing that matters to epistemic utility, does accuracy justify Conservatism?

(2) Does Evidentialism (Conee & Feldman) or Williamson’s Evidence = Knowledge thesis justify Epistemic Impartiality?

(3) Given that you and I are equally rational epistemic agents, how should we respond to cases of epistemic peer disagreement where we share the same total evidence but have different opinions? Many recent discussions on epistemic peer disagreement assume only precise credences. In particular, according to the Equal Weight View (EWV), we should respond to epistemic disagreement by splitting the difference in our credences. Given that our prior opinions are precise, EWV
implies that we should always have the same precise credence, as a rational response to epistemic disagreement, by giving our opinions an equal weight. Does this view adequately represent the ignorance that is present in a given situation? What about an alternative view that I call the Equal Ignorance View (EIV)? According to EIV, disagreeing epistemic peers should be understood as having the same imprecise credence, which can be represented by a set of prior precise credences. When we compare EIV with EWV, which one provides a better response to epistemic peer disagreement?

(4) How does the debate over imprecise credences relate to the debate over Permissivism/Uniqueness? Can imprecise credences support the claim that there is a uniquely rational prior?
REFERENCES


To prove that if updating by Jeffrey Conditionalization is rationally permissible for an agent, Permissivism$_1$ and Permissivism$_2$ do not collapse given WPE, suppose an agent, called Yelena, updates her credences by Jeffrey Conditionalization rather than by Bayesian Conditionalization. As Levinstein (p.10) himself points out for his second argument, all we need to assume for Jeffrey Conditionalization is that updating by Jeffrey Conditionalization is rationally permissible for an agent like Yelena. Let $r$ be one of members of the set of rational credence functions ($R$). In order to show that, given WPE, Permissivism$_1$ (or Permissivism$_2$) does not collapse into Uniqueness or Permissivism$_3$, it is enough to focus on $r$. For the sake of argument, I will assume in what follows that a rational agent can learn $r\in R$ with uncertainty. We shall now compare the following two updating sequences regarding $r\in R$:

**The first sequence:**

At $t_0$: $y_0(r\in R) = y_0(r\not\in R) = 0.5$

\[
\downarrow \quad \text{--- learning experience i (} y_1(r\in R) = 0.97 \text{ and } y_1(r\not\in R) = 0.03 \text{ represent the direct effect of it)}
\]

At $t_1$: $y_1(r\in R) = 0.97$; $y_1(r\not\in R) = 0.03$

\[
\downarrow \quad \text{--- learning experience ii (} y_2(r\in R) = 0.95 \text{ and } y_2(r\not\in R) = 0.05 \text{ represent the direct effect of it)}
\]

At $t_2$: $y_2(r\in R) = 0.95$; $y_2(r\not\in R) = 0.05$

**The second sequence:**

At $t^0$: $y_0(r\in R) = y_0(r\not\in R) = 0.5$
\[ \downarrow \text{--- learning experience i' (} y_1(r \in R) = 0.95 \text{ and } y_1(r \notin R) = 0.05 \text{ represent the direct effect of it)} \]

At \( t_1' \): \( y_1(r \in R) = 0.95; \ y_1(r \notin R) = 0.05 \)

\[ \downarrow \text{--- learning experience ii' (} y_2(r \in R) = 0.97 \text{ and } y_2(r \notin R) = 0.03 \text{ represent the direct effect of it)} \]

At \( t_2' \): \( y_2(r \in R) = 0.97; \ y_2(r \notin R) = 0.03 \)

(\text{where } y_i \text{ is Yelena’s credence function at } t_i.)

In the first sequence, Yelena’s credence in \( r \in R \) and credence in \( r \notin R \) are first \textit{directly} updated to be 0.97 and 0.03, respectively, and then they are \textit{directly} updated to be 0.95 and 0.05, respectively; in the second sequence, she directly changes them in reverse order.

Note that, in the first sequence, Yelena’s new credence function at \( t_2 \) is

\[ (I) \quad y_2(\cdot) = y_0(\cdot | r \in R) \cdot y_2(r \in R) + y_0(\cdot | r \notin R) \cdot y_2(r \notin R) = y_0(\cdot | r \in R) \cdot (0.95) + y_0(\cdot | r \notin R) \cdot (0.05) \]

(By Jeffrey Conditionalization)

Let \( y_0 \) be “a witness to the existential claim in WPE.” Then, given WPE, Yelena’s credence function at \( t_2 \) is

\[ (II) \quad y_2(\cdot) = r(\cdot | E, r \in R) \cdot (0.95) + y_0(\cdot | r \notin R) \cdot (0.05) \]

In the second sequence, Yelena’s new credence function at \( t_2' \) is

\[ (I') \quad y_2(\cdot) = y_0(\cdot | r \in R) \cdot y_2(r \in R) + y_0(\cdot | r \notin R) \cdot y_2(r \notin R) = y_0(\cdot | r \in R) \cdot (0.97) + y_0(\cdot | r \notin R) \cdot (0.03) \]

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\[ y_0(\cdot | r \notin R)(0.03) \]

(By Jeffrey Conditionalization)

Then, given WPE, Yelena’s credence function at \( t' \) is

\[ (II') \quad y_2(\cdot) = r(\cdot | E, r \in R)(0.97) + y_0(\cdot | r \notin R)(0.03) \]

(II) and (II’) are clearly different. As long as updating by Jeffrey Conditionalization is
rationally permissible, at least to agents like \( Y_0 \) (Yelena at \( t_0 \)), WPE does not rule out the
possibility that \( \text{Permissivism}_1 \) (or \( \text{Permissivism}_2 \)) are rational epistemic principles: WPE
does not prevent \( Y_0 \) from a permissive case where \( \text{Permissivism}_1 \) (or \( \text{Permissivism}_2 \)) holds.