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Coherence as Joint Satisfiability

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ABSTRACT

According to many philosophers, rationality is, at least in part, a matter of one's attitudes *cohering* with one another. Theorists who endorse this idea have devoted much attention to formulating various coherence requirements. Surprisingly, they have said very little about what it takes for a set of attitudes to be coherent *in general*. We articulate and defend a general account on which a set of attitudes is coherent (roughly) just in case and because it is logically possible for the attitudes to be jointly satisfied in the sense of jointly fitting the world. In addition, we show how the account can help adjudicate debates about how to formulate various rational requirements.

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1. Introduction

Many philosophers believe that there is a kind of rationality, *structural rationality*, that has only to do with whether one's attitudes cohere or 'fit together.' They think that norms of structural rationality don't require that one hold one or another specific attitude. Nor do these norms have anything to say about whether one's attitudes are appropriate, given one's circumstances and evidence, and given what things are truly worth doing, valuing, etc. (Worsnip 2021: 5–6). Instead, this kind of rationality only demands that certain relations obtain between one's mental states and their contents, where the contents of one's attitudes can be described very abstractly, using variables and schematic symbols (Worsnip 2021: 8). In short, structural rationality doesn't impose constraints on the contents of one's mind as such, only on its structure (Brunero 2010; Ross 2012; Broome 2013; Worsnip 2018, 2021). Structural rationality is often contrasted with *substantive rationality*, which consists in correctly responding to one's reasons or, as we might put it more colloquially, being reasonable based on one's circumstances and evidence.¹

*Both authors contributed equally to this work.

¹ We assume only that structural rationality is a unified phenomenon, but we make no assumptions about whether it can be reduced to substantive rationality (as Kiesewetter 2017 and Lord 2018 argue), or whether

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Philosophers interested in rationality have recently devoted much attention to formulating and defending various coherence requirements as norms of structural rationality. These include the following:²

Belief Consistency An agent must not [believe that p and believe that $not-p$].

Intention Consistency An agent must not [intend to Φ , intend to Ψ , and believe that they will not (or cannot) Φ and Ψ].

Means-Ends Coherence An agent must not [intend to Φ , believe that if they don't now intend to Ψ , then they will not (or cannot) Φ , and not intend to Ψ].

Intention-Belief Consistency An agent must not [intend to Φ and believe that they will not (or cannot) Φ].

Modus Ponens An agent must not [believe that p , believe that *if p , then q* , and not believe that q].

Surprisingly, however, very little has been said about what it takes *in general* for a set of attitudes to be coherent in the way required by rationality. What is it that rationality requires of agents when it demands that they be coherent? Some authors even doubt that this question can be answered systematically. According to John Broome (2013: 150), for example, we might not be able to do much better than rely on our intuitions in determining whether particular combinations of attitudes are incoherent (see also Brunero 2020: 206–7).

We think that a general account of coherence can be articulated. In fact, we believe that coherence requirements like those presented above can be accounted for in terms of a unified conception of coherence. We call it the *Coherence as Joint Satisfiability* view (CJS, henceforth). Roughly, the view claims that a set of attitudes is coherent just in case and because they can be jointly satisfied, where satisfaction is understood in terms of a notion of *fit*, to be made precise, between each attitude and the world.

In this paper, we articulate and defend CJS. We proceed as follows. In sections 2 and 3, we discuss and reject two recent accounts of coherence due to Alex Worsnip and John Brunero. Seeing where Worsnip and Brunero go astray helps us identify some of the desiderata for a theory of coherence. In section 4, we introduce CJS and show how it meets these desiderata. Section 5 discusses the explanatory power of the view. As we will see, CJS guides us in correctly formulating various rational requirements, often with surprising implications. For example, the view entails that *Modus Ponens* is not a purely theoretical requirement. It has a practical aspect to it. Section 6 addresses the objection that CJS is underinclusive in being unable to account for the incoherence involved in *akrasia*. Section 7 addresses the objection that it is overinclusive for including inconsistency in one's desires as a form of incoherence. Finally, section 8 responds to the objection that CJS assumes that our attitudes towards propositions or actions are binary (believing that p or that $not p$, intending to Φ or $not \Phi$, etc.), and cannot make sense of the incoherence of, say, believing that p while

the reduction goes the other way around (or, indeed, whether we should be eliminativists about substantive rationality). However, we hope that by getting clearer on the target phenomenon (namely, structural rationality), we can help further this debate.

²The precise formulation of some of these requirements is controversial. As we discuss below, our view of coherence offers a principled way of resolving disputes between theorists about the right way of formulating some coherence requirements.

suspending judgment about whether p , or having credences in p and *not* p that violate the probability axioms.

2. Worsnip's Dispositional Account

Alex Worsnip (2018) gives an account of incoherence in terms of dispositions to revise mental states. In his more recent book-length treatment of coherence, he defends the more modest claim that the account he originally gave is merely 'a property that incoherent states, and only incoherent states, have in common, that can be used as a kind of test for incoherence' (2021: 12). Because our aim is to give an *account* of coherence that improves upon existing accounts, we'll evaluate Worsnip's view as a full-fledged metaphysical definition of coherence. On Worsnip's view, a set of attitudinal mental states³ is jointly incoherent iff:

1. Any agent who holds these attitudes is disposed to give up at least one of them under conditions of full transparency.
2. The fact that agents are so disposed is (partially) constitutive of (at least some of) the mental states in question (2018: 188, 2021: 133).

By 'conditions of full transparency,' Worsnip means that 'the agent knows, and explicitly and consciously believes, that she has the states in question, without self-deception, mental fragmentation, or any failure of self-knowledge (pertaining to those attitudes)' (2018: 188). An agent who finds themselves holding genuinely incoherent attitudes under full transparency is disposed to revise at least one of them. If they aren't, then they don't count as really having the relevant mental states.

To make this less abstract and to see the appeal of Worsnip's view, imagine that you violate *Means-Ends Coherence*. Suppose that your friend has asked you to officiate her wedding. You intend to carry out her request, believe that to do so, you must get ordained through the Universal Life Church, and yet you realize that you have no intention of getting ordained through this organization. Plausibly, given your awareness that you hold these attitudes, you would be strongly disposed to revise at least one of them, perhaps by forming the intention to get ordained, or by reconsidering your belief that the Universal Life Church is your only option. If you're not disposed to make some such change, we'd likely doubt whether this is the correct description of your psychology. Maybe you only *wish* to officiate, or you're merely somewhat *confident* that the Universal Life Church is your sole remaining option.

Similar remarks would apply if we considered an agent whose attitudes run afoul of any of the other coherence requirements that we presented above. For this reason, we're inclined to think that Worsnip has identified a feature that incoherent attitudes share, and that serves as a useful diagnostic for incoherence. However, we think that the view fails as a full account of what incoherence *is*.

Worsnip doesn't say much about why agents who have incoherent attitudes are disposed to revise them under full transparency, other than that these dispositions are constitutive of the attitudes. Of course, an explanation can be successful even if it appeals to explanans that call for explanation. However, Worsnip's appeal to

³ By 'attitudinal mental states,' Worsnip refers both to attitudes and *absences* of attitudes (2018: 188). As we discuss in the next section, any account of coherence must refer to the absence of certain attitudes.

constitutive dispositions begins to look like a problem when we realize that these aren't simply *brute* dispositions. It's not as though someone who realizes that, say, they believe that p and *not* p just finds themselves revising one of their beliefs. They don't transition from one mental state to the other by mere association, as someone does when the thought of snow reminds them of Christmas. Rather, they realize that they must revise at least one of their states, and then *reason* about which state to revise. In other words, their change of mind is a reasoned change of mind. Worsnip's view doesn't show why this disposition is reasoned, nor does it shed any light on the premises in the reasoning.

What explains the fact that the agent is disposed to reason their way out of incoherence? It's natural to think that this fact is (partly) explained by the agent's realization that they're incoherent. That is, the awareness of incoherence explains why an agent is disposed to revise their attitudes under conditions of full transparency.⁴ If that's correct, though, then Worsnip's account would seem to be viciously circular. He tries to explain facts about incoherence in terms of facts about dispositions to revise mental states. Yet, facts about these dispositions are best explained by facts about (the realization of) incoherence.

But perhaps Worsnip has resources to avoid this vicious circularity. In his book, he claims that it's *fitting* to structure one's deliberation so that only coherent sets of attitudes are considered (2021: 256). He states that this claim is true whether we think of 'fitting' in a broad sense, according to which it's fitting to Φ just in case it's correct to Φ , given the standards constitutive of Φ -ing, or in a narrower sense on which some response R towards an object O is fitting just in case O *merits* or *calls for* R (2021: 261). Worsnip could say that an agent who realizes that their attitudes are incoherent is disposed to revise them because they recognize that they could not reason their way to this combination of attitudes if they were deliberating in a fitting manner.

Fittingness will play a central role in our account of incoherence. However, we think that Worsnip's explanation of why agents are disposed to reason their way out of incoherence is too indirect. It strikes us as much more plausible that the agent is disposed to revise because they recognize that the combination of attitudes *itself* is unfitting, and that the unfittingness of the combination can be explained in terms of the fact that the attitudes that make up the combination cannot all be fitting together. The agent realizes that, for instance, their beliefs cannot both be true, and is disposed to revise through a process of reasoning because of this realization. Or they realize that they are means-ends incoherent and are then disposed to revise because of their awareness that if they remain this way, then either their belief is false, or they'll fail to carry out their intention.

This objection suggests an alternative way to understand coherence as, in some sense, a matter of having beliefs that can't all be true, intentions that can't all be carried out, etc. We see this kind of account as more promising because it would not only explain coherence but also give a straightforward explanation of why agents are disposed to resolve their incoherence through reasoning.

⁴ Of course, the agent need not realize *de dicto* that they're incoherent. After all, small children and some animals seem capable of reasoning out of incoherence, but they lack the concepts needed to form the thought that they're incoherent. All that is needed is that the agent realizes *de re* that they're incoherent, in the sense of realizing that their attitudes instantiate a property that calls for them to be revised.

3. Brunero's Role-Based Account

John Brunero (2020: ch. 7.2) provides an account of certain coherence requirements in this vein, on which a set of attitudes is coherent roughly if it is logically possible for all of them to achieve their constitutive aims. For Brunero, the *aim* of an attitude is its 'role' or 'job description' within the agent's psychology. The role of belief is to 'correctly represent how things are' (2020: 185), and the role of intention is 'effective control of action' (2020: 195).

In our view, Brunero is correct that coherence is fundamentally a matter of whether it's logically possible for one's attitudes to satisfy some condition. However, he only applies this analysis to certain incoherent combinations, such as inconsistency in one's beliefs and intentions, means-ends incoherence, and failures to believe the logical consequences of one's beliefs. Moreover, he states that this explanation won't work for all of the cases of incoherence, including intransitive preferences and *akrasia* (2020: 205–6).⁵ Although Brunero is correct that these cases present certain challenges (which we'll take up in sections 5 and 6), we think that an account that unifies all of the cases of incoherence is much to be preferred, given—as we noted in the introduction—that all cases of incoherence seem to share certain distinctive hallmarks.

Furthermore, as we'll now see, Brunero ultimately abandons this basic idea that incoherence is, in some sense, a matter of logical inconsistency, when he tries to explain cases where an agent is incoherent in part because they *lack* a certain attitude (2020: 204). Suppose that you believe that *p* and believe that *if p then q*, but you fail to believe that *q*. Given this combination of attitudes, there is still a logically possible world in which each attitude that you hold fulfills its role. Namely, one in which your beliefs are true, but you just fail to believe some of their logical consequences.

Brunero thinks that his view can be amended to explain why the absence of an attitude is sometimes part of what renders an agent incoherent. According to Brunero, belief aims at truth 'given the ways in which we systematically *form*, *revise*, and *abandon* beliefs in light of indicators of truth' (2020: 204). For this reason, he suggests that it's more accurate to say that 'one's belief-forming *mechanisms*, rather than any particular belief, have the constitutive aim of arriving at the truth with respect to some particular proposition' (2020: 205).

He doesn't reformulate his broader view in light of this point, but we can revise Brunero's account to say that a set of attitudes is coherent if it's logically possible for the mechanisms that produce each attitude in the set to jointly achieve their aims. This reformulation, however, raises immediate problems: If you fail to believe a logical consequence of your beliefs, it's still logically *possible* for your belief-forming mechanism to play its role in your psychology. The mechanism is currently failing, but logic isn't blocking it from playing its role. It simply has to form the relevant belief.

More generally, in *any* case where an agent's attitudes are incoherent, that fact won't prevent their attitude-forming mechanisms from playing their roles. Rather, it will provide an *opportunity* for them to do their work. For example, if you believe that *p* and that *not p*, your belief-forming mechanism can play its role of forming, revising, and abandoning beliefs in light of evidence. Since both beliefs cannot be true, the

⁵ This is why we characterized Brunero as only offering a *sufficient* condition for coherence, rather than a set of necessary and sufficient conditions.

mechanism can abandon whichever belief has weaker evidential support (or perhaps abandon both beliefs if the evidence doesn't decisively favor one belief over the other).

We could fix Brunero's view by reformulating it to say that a set of attitudes is coherent if it's logically possible for the mechanisms that produce each attitude in the set to jointly achieve their aims without additional work or revisions to the agent's attitudes.⁶ This reformulation gets the right verdicts about many cases. For example, someone with inconsistent beliefs or intentions will need to revise their attitudes for their mechanisms to represent the world accurately or to effectively control their actions. Additionally, it's plausible that if someone is means-ends incoherent, then either their means-ends belief is false or their intention to realize the end will fail to effectively control their actions unless they adopt an intention to take the means.⁷

This fix brings us close to the view that we are going to develop. However, we see Brunero's appeal to attitude-forming mechanisms as a weakness in his account. The problem with *simply* appealing to attitudes and their constitutive aims, which Brunero correctly identifies, is that some cases of incoherence can only be fully explained by appeal to the absence of certain attitudes. The way to remedy this problem, in our view, is to give an account that refers *both* to attitudes and to their absence. On Brunero's suggested solution, in contrast, most of the explanatory work is done by the mechanisms that are causally responsible for the agent's attitudes and their absences. We believe that this solution posits an additional, unnecessary explanans. We can explain coherence and incoherence without saying anything about the mechanisms that are causally responsible for our attitudes. Let's turn now to our own account to see how this can be done.

4. Coherence as Joint Satisfiability

We think that a theory of coherence should begin with the idea that intentional states like belief, desire, and intention have *conditions of satisfaction* (Searle 1983). The satisfaction conditions of an intentional state are those conditions under which there is a *fit* between the state and the world, in whichever *direction of fit* is appropriate for the kind of state in question (Anscombe 1957). A belief is satisfied if and only if it fits the world, in the sense of representing it as it truly is. An intention is satisfied if and only if the agent changes the world so that it comes to fit the way that the intention specifies.

Let us now introduce the notion of a *psychological profile*, namely, a partial specification of an agent's mental states at a given point in time. Our theory, CJS, is the view that a psychological profile P of agent A is coherent just in case and because there is a logically possible world w such that:

1. for each state specified in P , that state is satisfied at w , and
2. P is a correct description of A 's psychology at w .

⁶ We would like to thank an anonymous referee for suggesting this fix.

⁷ This new account still doesn't deliver the verdict that violations of the Modus Ponens requirement are incoherent. However, as we'll argue in section 5, this requirement (as typically formulated) isn't a genuine coherence requirement.

Consider how various purported coherence requirements fall out of this view. Here are four different psychological profiles an agent *A* might instantiate at any given time:

Profile P1

- *A* believes that *p*.
- *A* believes that not *p*.

Profile P2

- *A* intends to Φ .
- *A* intends to Ψ .
- *A* believes that they will not (or cannot) Φ and Ψ .

Profile P3

- *A* intends to Φ .
- *A* believes that if they don't now intend to Ψ , then they will not (or cannot) Φ .
- *A* doesn't intend to Ψ .

Profile P4

- *A* intends to Φ .
- *A* believes that they will not (or cannot) Φ .

In each of these cases, the agent has an incoherent combination of attitudes. Or so, at least, many theorists are inclined to say. P1 involves a breach of *Belief Consistency*: the agent simultaneously believes a proposition and believes its negation. P2 involves a breach of *Intention Consistency*: the agent simultaneously holds two intentions that they believe that they will not or cannot jointly realize (Bratman 1987). P3 is a breach of *Means-Ends Coherence*: the agent doesn't intend the means that they believe are necessary for their intended end (Brunero 2020). Finally, P4 involves a breach of *Intention-Belief Consistency*: the agent intends to do something that they believe that they will not or cannot accomplish (Harman 1976).

CJS explains why each of these psychological profiles involves a form of incoherence. P1 involves a failure of condition (1): there is no possible world where both beliefs are true. P2 also involves a failure of condition (1): there is no possible world where the agent carries out both of their intentions and their belief is true. P3 involves a failure of condition (2): any world where the agent carries out their intention to Φ and where their belief is true is a world where they also intend to Ψ right now. In any such world, P3 is an incorrect description of their psychology. Finally, P4 involves a failure of (1): there is no possible world where the agent's belief is true, and they carry out their intention.⁸

Let's take stock of how CJS improves upon Worsnip's and Brunero's accounts. CJS can explain why agents are disposed to revise certain combinations of attitudes under conditions of full transparency, and why these dispositions are constitutive of the attitudes in question. Plausibly, it's constitutive of having any attitude that you're in some

⁸ You may be thinking that CJS cannot explain the incoherence of being *akratic*. If you believe that you ought to Φ but lack an intention to Φ , your belief can be true without any change to your psychology. As we noted in the introduction, we'll address this objection in section 6.

sense committed to that attitude being satisfied (Anscombe 1957; Smith 1987). So, if you believe that p but keep getting evidence that *not* p , you'll be disposed to revise your belief so that your doxastic attitude regarding p matches reality. Or if you intend to Φ and learn that Ψ -ing is necessary for Φ -ing, you'll become disposed to Ψ .

Of course, these dispositions can easily be overridden. We humans often hold beliefs that are poorly supported by our evidence and fail to act on our intentions. However, it seems that overriding these dispositions requires ignoring or otherwise putting out of mind the possibility of a lack of fit between your attitude and the world. This can be done actively, as when you go out of your way to avoid evidence that might count against your belief, but it also can happen more passively, as when you fail to take the means to some intended end because you are preoccupied with other matters. If it's *transparent* to you that there is no logically possible world in which all your attitudes are satisfied and you keep your current psychological profile, then you'll be disposed to revise your profile so that your attitudes can be realized.

CJS also offers a simple solution to the problem that we identified for Brunero. Our view can account for the role that absent attitudes can play in explaining incoherence by holding fixed the agent's psychological profile for purposes of determining whether there is a possible world in which their attitudes are satisfied. If, as in the case of P3, the only possible world in which the agent's attitudes are satisfied is one in which they adopt some further attitude, then CJS classifies their current profile (correctly) as incoherent.

5. Explanatory Power

A successful theory of psychological coherence should have an epistemic payoff: it should help theorists figure out which combinations of attitudes are genuinely incoherent, and which aren't (Worsnip 2018: 185). CJS does just that. In addition to accounting for several intuitive coherence requirements, the view explains why some formulations of them are preferable to others. Further, it has surprising implications concerning the nature of some of these requirements and can be extended to explain forms of coherence involving attitudes besides beliefs and intentions, such as the requirement that one's preferences be transitive. Finally, CJS is still quite flexible. It leaves room for substantive debates about coherence requirements and helps us see that the best way to move forward in these debates is to work out the satisfaction conditions for the relevant attitudes.

To begin appreciating the explanatory power of CJS, note, first, that the view explains why *Intention Consistency* can take both a weak and a strong form (Bratman 1987: ch. 3; Holton 2009: ch. 2). In its weak form, the requirement demands that one doesn't hold inconsistent intentions, meaning intentions that one cannot, as a matter of logic, jointly realize (such as intending to Φ and intending to *not* Φ). In other words, one's plans should be *internally consistent*. In its strong form, the requirement demands that one's plans be consistent relative to one's beliefs. Even if my intentions aren't internally inconsistent, it is sufficient for incoherence that I believe that I will not or cannot carry out all of them. Likewise, CJS accounts for why *Intention-Belief Consistency* takes a weak rather than a strong form. It requires the *absence* of a belief that one will not realize one's intention, not the *presence* of a belief that one will succeed (Bratman 1987: ch. 3).

Second, CJS explains why means-ends incoherence must involve a tensed instrumental belief. To be incoherent, one must believe that intending the means *now* is necessary to achieve one's end (Kolodny and Brunero 2020). If the agent believes that they can intend to take the means in the future and still achieve their goal, their profile isn't incoherent. In a possible world where their instrumental belief is true and they eventually take the necessary means to their end, all of the attitudes in their profile are satisfied and their psychological profile is the same, in the sense that they now lack an intention to take the means.

Third, CJS entails that the *Modus Ponens* (MP) requirement involves a motivational or practical aspect. Failing to believe what follows by MP from your beliefs isn't sufficient for being incoherent. One must also *care* whether such consequences are true (Broome 2013: 158). To see why, note that the following psychological profile isn't incoherent according to CJS:

Profile P5

- A believes that p .
- A believes that *if p , then q* .
- A doesn't believe that q .

There is a possible world where p and *if p , then q* are true but A just doesn't believe that q . To get an incoherence result, an extra mental state is needed, namely:

- A cares whether q .

To say that A cares whether q is to say that they want to have a true belief about q , that is, they want to believe q if and only if q is true. There are two types of worlds where this desire is satisfied. Either q is true and the agent believes that q , or q is false and the agent doesn't believe that q (or believes that *not q*). Call these, respectively, a q -world and a *not- q* -world. Any world where the agent's beliefs that p and that *if p , then q* are satisfied must be a q -world. In a q -world, the agent believes that q . Hence, P5 is an incorrect description of their psychology in that world.

We believe that this is a surprising and interesting result. It is surprising because it indicates that MP isn't a purely theoretical requirement. It governs a combination of epistemic and practical attitudes. Moreover, the result is interesting because it shows that one can coherently fail to believe some of the consequences of one's beliefs. In other words, psychological coherence doesn't require closure under MP.⁹ Other philosophers argue against closure by appealing to an independent 'principle of clutter-avoidance' (Harman 1986; Broome 2013). The idea is that one cannot be required to clutter one's mind with all the trivial consequences of one's beliefs. On CJS, in contrast, failures of closure are permissible simply because they don't entail incoherence.

To give you some reason to think that CJS looks plausible even when we turn our attention away from coherence requirements that are formulated in terms of beliefs

⁹ Even if closure isn't a coherence requirement, it might still be a desideratum of theoretical rationality, in the sense that *ideally* rational agents believe all of the logical consequences of their beliefs. We thank Philip Pettit for bringing this point to our attention.

and intentions, consider what the view can say about an agent with the following psychological profile:

Profile P6

- A prefers a to b .
- A prefers b to c .
- A prefers c to a .

This agent's preferences are *intransitive*. It's not exactly clear what the satisfaction conditions for preference are. The answer to this question depends on what kind of mental state preference turns out to be.¹⁰ However, we think that on any plausible account, preference can be taken to involve a kind of belief or judgment about a relation between the objects of one's preferences. The most natural candidate is the *better than* relation.¹¹ On this understanding of preference, someone with intransitive preferences believes that a is better than b , b is better than c , and c is better than a .¹²

There is no possible world in which the betterness relations between these three objects are such that all of the agent's beliefs are true. If any two of these objects are equally good or on a par, then one of the beliefs will be false. That leaves six remaining possibilities (we use ' $<$ ' as a shorthand for 'is better than'):

- (1) $a < b < c$; (2) $a < c < b$; (3) $b < a < c$; (4) $b < c < a$; (5) $c < a < b$; or
(6) $c < b < a$.

In each of these possibilities, at least one of the agent's beliefs is false. For example, in possibility (1), their preference for c over a is unsatisfied, whereas in (6), only the preference for c over a is satisfied. No matter how the betterness relations turn out, at least one of the agent's preferences will fail to be satisfied.

Again, we believe that this is a surprising and interesting result. It shows that the transitivity of preference is not a purely practical requirement. It has an epistemic or theoretical aspect to it, in so far as it rules out a kind of incoherence concerning the agent's beliefs about which of their options are better than others.

Finally, while CJS has considerable explanatory power, it is also flexible and can help shape debates about whether certain profiles are coherent without settling them. To know whether a psychological profile is coherent, on CJS, we need to know the satisfaction conditions of the attitudes in the profile. We have been working with fairly weak assumptions about the satisfaction conditions for belief and intention. However, you can accept our account but think, for instance, that a

¹⁰ According to a once-influential view, preferences aren't mental states at all. Instead, they are regularities in an individual's behaviour. On this view, one cannot act against one's preferences. Rather, these are always *revealed* in one's actual choices. We put aside this view here, as we are interested in offering an account of *psychological coherence*.

¹¹ For a detailed treatment of the logic of *better than* and other value-theoretic concepts, as well as discussion of the connections between someone's good and their rational preferences, see Broome 1991.

¹² To prefer a over b isn't simply to regard a as better than b in some respect. You might prefer heavy metal to classical music, while still thinking that classical music is better along some dimensions, such as harmonic complexity. So, we think that the most plausible rendering of this idea is that to prefer a to b is to believe that a is better than b , *all things considered*.

belief is satisfied if and only if it constitutes *knowledge*, or that an intention is satisfied if and only if it causes the agent to act as specified, *in the right kind of way*.

The more robust the satisfaction conditions for a given attitude, the easier it will be for that attitude to fail to cohere with other attitudes. For example, if truth is the satisfaction condition for belief, then it's coherent to believe that *p* but also believe that you don't know that *p*. However, if knowledge is the satisfaction condition, then this combination of attitudes is incoherent.

There are various ways that we might identify the satisfaction conditions for an attitude that don't appeal to claims about how that attitude coheres (or fails to cohere) with other attitudes. For example, we can ask which of the reasons that bear on the attitude are *right-kind* reasons, and we can consider the conditions under which these right-kind reasons are sufficiently strong to justify one in forming the attitude. CJS helps us see the relevance of these kinds of considerations to debates about coherence.

6. Objection 1: CJS Generates Too Few Requirements

We turn now to discussing possible objections to CJS. We anticipate objections to the effect that the view is extensionally inadequate. It generates both too few and too many requirements.

Regarding the 'underinclusiveness' charge, we suspect some readers will object that CJS cannot explain what's incoherent about being akratic, in the sense of believing that one ought to act in some way but failing to ever form an intention to act thusly or intending to act contrary to one's belief. Many philosophers think that these profiles are incoherent in failing to satisfy what's called the 'enkratic requirement'.¹³ However, if an agent has either of these psychological profiles, it's logically possible for each of their attitudes to be satisfied without any change in their profile. In the first case, their normative belief can be satisfied so long as it's logically possible that the belief is true. In the second type of case, the agent's attitudes are satisfied in the world in which their belief is true, and they carry out their intention to act contrary to it.

There are two ways for us to explain how the *enkratic* requirement fits within CJS. The first is to deny that it is a requirement of *coherence*. We think that this response has several points in its favor.

First, there is nothing incoherent in believing that one ought to act some way, given only *some* set of considerations or some standard, yet not intending to act in that way. Think of someone who believes that they legally ought to pay their taxes, but who doesn't care about breaking the law, or an amoralist who agrees that they morally ought to treat others with minimal respect yet has no intention of doing so. It's only plausible to view someone as incoherent when they believe that they ought, *all things considered*, to do something but don't intend to do it (Worsnip 2021: 144). For example, there is at least some temptation to think that it's incoherent to believe that you ought, all things considered, to pay your taxes and to have no intention of paying.

However, there is considerable controversy among contemporary meta-ethicists about how to understand all things considered normative judgments. Some theorists

¹³ Broome (2013: ch. 9.5, ch. 16) devotes considerable attention to this putative requirement. See also Kolodny 2005, Scanlon 2007, and Setiya 2007.

doubt that this notion even makes sense (Copp 1997; Tiffany 2007; Baker 2018). Given that philosophers don't currently have a good grip on what this attitude is supposed to be, we think that it's a mistake to treat *akrasia* as an unproblematic example of incoherence.

Second, if we're inclined to think of these all things considered judgments as beliefs or belief-like in having a mind-to-world direction of fit, it's not so intuitive that *akrasia* is incoherent. Someone who simultaneously believes that they ought to apologize for their rude behavior and that it's not the case that they ought to apologize, or who intends to apologize and intends not to apologize, seems incoherent in a way that an *akratic* agent does not. In the latter case, the agent's psychological profile presents an intelligible picture of the world and of how the agent is motivated to act within that world. In stark contrast, in the former cases, the agent's attitudes, taken together, fail to present us with a cogent picture of the world (as it is or as the agent intends to make it).

Third, it's noteworthy that none of the theorists who group this requirement with other putative coherence requirements offers an account of coherence. Moreover, if we look at the theories on offer, it's far from clear that *akrasia* turns out to be incoherent on any of these views.

It seems possible to be *akratic* under conditions of full transparency. For instance, I may think, 'I ought to apologize for my rude behavior, but I'm not going to do so', and maintain this psychological profile indefinitely. So *akrasia* poses a challenge for Worsnip's view.¹⁴ For Brunero, *akrasia* presents the same problem that it does for us, namely, that it's logically possible for an *akratic* agent's attitudes (or attitude-forming mechanisms) to be satisfied.¹⁵

Of course, some other theory of coherence may come along that shows what the *enkratic* requirement has in common with other coherence requirements. But the current state of the literature provides some inductive evidence that *akrasia* is a quite different phenomenon from, say, intention or belief inconsistency.

Finally, note that it could be the case that any agent who is *akratic* is guaranteed to be irrational in the *substantive* sense of failing to respond to their reasons. Lord (2018: ch. 2.4.5) defends this claim. According to Lord, there are two possibilities: either the *akratic* agent lacks sufficient reason to believe that they ought to Φ , or they have sufficient reason. If the former, then their belief that they ought to Φ constitutes a failure to correctly respond to their reasons. If the latter, then they fail by lacking an intention to Φ .

Lord's argument for this second claim is roughly that if you have sufficient reason to believe that you ought to Φ , then you have *decisive* reason to hold this belief. That is because evidence isn't *permissive*, in the sense of providing you with sufficient reason to, say, believe that you ought to Φ or to suspend judgment about whether you ought to Φ .¹⁶ Given, then, that you have decisive reason to *believe* that you ought to Φ , Lord's thought is that these reasons will also provide you with decisive reason to *intend* to Φ .

¹⁴ Worsnip recognizes this objection and defends a moderate form of judgment internalism to explain why *akrasia* is at least *somewhat* incoherent on his view (2018: §9.4, 2021: ch. 5.4.3). We explain below how judgment internalism also provides a way for *akrasia* to count as genuine incoherence on our theory.

¹⁵ Brunero appreciates this problem and expresses skepticism about finding one unifying theory to cover all requirements (2020: 206).

¹⁶ This claim is controversial in epistemology. Lord notes that the cases in which permissivism seems plausible involve less than fully transparent evidence. However, he thinks that the only permissible response in these situations is to suspend judgment (2018: 47–48).

If Lord is correct, it's unsurprising that some philosophers would mistake this kind of rational failing for incoherence. They are similar failings. In both cases, some component of your psychological profile is guaranteed to fail in some way. In the case of incoherence, at least one of your attitudes cannot be satisfied. And in the case of *akrasia*, one or more components of your psychological profile must fail to constitute a correct response to your reasons.¹⁷

So, there are grounds for doubting that the *enkratic* requirement is a coherence requirement, and there is a debunking explanation for why philosophers have thought that it is.

Our second option for handling the *enkratic* requirement is to show that the satisfaction conditions for normative judgment are actually such that an *akratic* agent's attitudes aren't jointly satisfiable. One way to do this is to endorse judgment internalism, the view that, necessarily, any normative judgment is accompanied by or (partly) constituted by some motivational attitude. Suppose, for instance, that anyone who believes that they ought to Φ also intends to Φ . On this assumption, the first kind of *akrasia* that we noted, in which an agent believes that they ought to Φ but never forms an intention to Φ , cannot possibly be instantiated in any psychological profile, so there is no phenomenon for a theory of coherence to explain. Additionally, any agent who is *akratic* in the second sense has inconsistent intentions. Since they believe that they ought to Φ , they also intend to Φ . Given their other intention not to Φ , there is no logically possible world in which both of their intentions are satisfied, so they are incoherent according to CJS.¹⁸

7. Objection 2: CJS Generates Too Many Requirements

Even if CJS is not underinclusive, it might be overinclusive. Indeed, the view seems to generate too many requirements. Most notably, it implies that *conflicting desires* are incoherent. If I desire to stay but also desire to leave, there is no possible world where all of my desires are satisfied. Yet, there is no incoherence involved in having conflicting desires.

To better appreciate this problem, consider that having conflicting desires is different from having inconsistent intentions (Bratman 1987). Someone who intends to stay at the party and at the same time intends to leave is rationally criticizable, whereas someone who merely desires to do both things isn't. However, CJS would appear to imply that both persons are incoherent in the same way. Desire and intention seem to have identical satisfaction conditions. Either state is satisfied whenever the world changes to match the state.

We can address this objection by distinguishing different ways of having conflicting desires. Suppose that I desire to leave the party because I have to get up early the next morning, but I desire to stay because I'm having fun. I cannot both stay and go, yet my

¹⁷ We believe that cases of *epistemic akrasia* can be given the same treatment. In these cases, the agent believes that they have decisive reason to believe that p , but they don't believe that p . Either their belief about what they have reason to believe is unreasonable, or they fail to believe something that they have decisive reason to believe.

¹⁸ We could also handle *akrasia* as follows: some authors (e.g., Frankfurt 1971) take *akrasia* to involve a conflict between one's first order and second order desires. On this picture, being *akratic* involves desiring to desire to Φ and, yet, not desiring to Φ (or desiring to not Φ). This profile is incoherent according to CJS, since any world in which your second order desire is satisfied is a world in which you have the first order desire, and so your psychology is different than in the actual world. We thank Michael Smith for this suggestion.

psychology seems coherent. CJS can explain this as follows: my conflicting desires to stay and to go are *instrumental* desires. I desire to go in order to promote my more general desire of being well-rested, and I desire to stay to further my more general desire of having fun. I also believe that, normally, these desires don't conflict.

More generally, we can think of any instrumental desire to Φ as being constituted by a pair of attitudes: a desire to Ψ (which may or not be itself instrumental) and a belief that Φ -ing is somehow conducive to Ψ -ing (Smith 2004). Hence, an agent with two conflicting instrumental desires has the following psychological profile:

Profile P7

- A desires to Ψ .
- A desire to χ .
- A believes that Φ -ing is conducive to Ψ -ing.
- A believes that not Φ -ing is conducive to χ -ing.

Clearly, this profile isn't incoherent on CJS. There is a possible world where the agent gets all that they want, and their instrumental beliefs are all true. They may, for instance, have other ways of Ψ -ing besides Φ -ing.

Now, it could be that my conflicting desires are *non-instrumental*. For example, I both desire sleep more than fun and desire fun more than sleep. If that's the case, however, then I seem to be genuinely incoherent. There is no way for me to change the world to reflect everything that I want. Similarly, I'm incoherent if I desire to leave, all things considered, and desire to stay, all things considered. Again, that's because there is no way for the world to fit what I want.

There is another way for CJS to handle conflicting desires, which starts from the (anti-Humean) idea that desire has a mind-to-world direction of fit. Suppose that a desire is satisfied just in case the object of the desire is, in fact, *desirable*. On this view, there is nothing incoherent in desiring one *aspect* of Φ -ing while also desiring some *other* aspect of *not* Φ -ing, provided that both aspects can be desirable in the same world. This seems true in the party case. It can be desirable for me to leave so as to get a good night's rest yet also desirable for me to stay in order to have more fun. What's not possible is for staying and leaving to be desirable in precisely the same respect, or for each option to be most desirable, all things considered. If I have a psychology that says otherwise, then I'm incoherent on CJS, and this verdict lines up with intuition.¹⁹

8. Objection 3: CJS Cannot Handle Non-Binary Attitudes

On our account, attitudes are incoherent when they cannot all fit the world together without a change in the agent's profile. When we ask whether the world can be such

¹⁹ We can give a similar response to a different worry about over-inclusiveness, namely, that CJS entails a belief-desire consistency requirement. If I desire to Φ but believe that I will not Φ , then my psychology would seem to be incoherent according to CJS. However, if my desire to Φ is instrumental, then I'm not incoherent on our view. Alternatively, if my desire is non-instrumental, then I seem to be genuinely incoherent because there is no way that I can make the world fit my attitude (assuming that my belief is true). Finally, it is possible that my Φ -ing is something desirable and yet I don't do it. Hence, on the view that desires have a mind-to-world direction of fit, I'm not incoherent if I desire to Φ but believe that I will not Φ . We thank John Brunero for raising this objection.

that an agent's attitudes are jointly satisfied, it looks like there are only two possibilities: the world is a certain way (or can be made to be that way) or it isn't (or can't be made to be that way). That's why, for instance, it's incoherent to believe that p and to believe that *not* p . Either p is true or p is false, and in neither of these two cases will both attitudes be satisfied. However, most epistemologists think that there are more than two belief-like attitudes that an agent can take towards a proposition. For example, the agent can also *suspend judgment* about p , and can have many different *degrees of confidence* or *credences* in p and *not* p .²⁰ These attitudes are also subject to coherence requirements, yet it's not obvious how CJS can explain them because it's not obvious what the satisfaction conditions for these attitudes are. We'll consider suspension of judgment first, and then credences.

8.1. Suspension of Judgment

Many contemporary epistemologists are interested in a phenomenon that is often referred to with expressions such as 'suspension of judgment,' 'withholding judgment,' and 'agnosticism.' We will use the term 'suspension of judgment.' It is not entirely clear whether everyone in this literature is talking about the same phenomenon. However, there is enough agreement among theorists about the desiderata for a theory of suspension of judgment that we can address how this phenomenon poses a challenge for our account and show how to solve it.

Most authors agree that suspension of judgment is not (or is not merely) the *absence* of belief. Suspension of judgment is an additional doxastic attitude (see, for example, Wedgwood 2002; Friedman 2013a). Moreover, epistemologists generally argue (or assume) that it is irrational to suspend judgment about p while also believing that p , or believing that *not* p . (see, for example, Friedman 2019: 303; McGrath 2021: 464).

We agree with all of these claims. Intuitively, someone who lacks a belief regarding p because they have never considered p is not suspending judgment about p . Moreover, it is irrational—at least in the structural sense—to believe that p while suspending judgment about p . Indeed, it is structurally irrational to believe any proposition that entails an answer to some matter about which one is suspending judgment. For example, it is incoherent for me to believe that anyone who loves the show *The Big Bang Theory* has bad tastes and that my brother Paul loves *The Big Bang Theory* while suspending judgment about whether Paul has bad tastes.

If suspension of judgment is an attitude that can fail to cohere with belief in these ways, what are the satisfaction conditions for suspension? Moreover, given these conditions, do CJS's verdicts about the (in)coherence of psychological profiles such as my profile regarding Paul's tastes line up with intuition? There are many different accounts of suspension of judgment in the recent literature.²¹ There is widespread agreement, however, that suspension of judgment involves *neutrality* or at least a *commitment* to neutrality.²²

²⁰ Plausibly, there are practical attitudes analogous to these epistemic attitudes, such as *deferring* one's decision (Schroeder 2012) or having an *inclination* to Φ while not all out intending to Φ (Goldstein 2016; Shpall 2016). We will focus on the doxastic attitudes because there is more philosophical work on these attitudes for us to draw upon, but we think that our analysis can be extended to these practical attitudes, as well.

²¹ Some think of suspension as a *sui generis* attitude (Friedman 2013a, 2013b, 2017). Others offer reductive accounts that invoke attitudes such as higher-order beliefs and intentions (Masny 2020; McGrath 2021).

²² Several authors argue that this neutrality is only temporary. We suspend judgment with the aim of judging later. See, e.g., Friedman 2017: 317, Masny 2020: 5024, and McGrath 2021: 469.

There are three basic ways of understanding this idea, all of which are represented in the literature.²³ The first is that the agent who suspends judgment is, in fact, neutral. That is, they neither believe that p nor believe that *not* p (Masny 2020; McGrath 2021; Lord and Sylvan 2021; Wagner 2022). On this account, it is simply impossible for an agent to suspend judgment about some matter while also holding a belief about it, so there is no datum for a theory of coherence to explain.

The second way of understanding neutrality is that the agent *intends* to remain neutral (or has some other attitude towards their own neutrality with a world-to-mind direction of fit) (see, for example, Friedman 2017; Masny 2020; Lord and Sylvan 2021; McGrath 2021). In other words, they intend to refrain from forming a belief that p or a belief that *not* p , perhaps by refraining from engaging in the processes that could lead them to form a belief. On this understanding, the satisfaction conditions for suspension of judgment regarding p are straightforward: the agent must not believe that p , believe that *not* p , or believe any other proposition that entails p or *not* p . If they do, then they are incoherent according to CJS. Suppose that an agent believes that p and suspends judgment about whether p . Any world in which both of these attitudes are satisfied is a world in which p is true and they don't believe that p or that *not* p . In such a world, their psychology is different than their psychology in the actual world, because they lack the belief that p . So, the only possible world in which their attitudes are satisfied is a world in which they have a different psychology, in which case their psychological profile runs afoul of the second condition of CJS.

Finally, we can model an agent's neutrality in terms of their *belief* that they are neutral (or in terms of some other attitude towards their own neutrality with a mind-to-world direction of fit) (Crawford 2004; Masny 2020). That is, an agent who suspends judgment about p believes that they don't believe that p or that *not* p . This belief in their own neutrality is satisfied if and only if the agent lacks both of these beliefs. Suppose that they aren't neutral and believe, say, that p . Any world in which their belief that p is satisfied and their belief in their neutrality is satisfied will be a world in which they lack the belief that p , violating condition two of CJS.

As long as suspension of judgment involves neutrality in one of these ways, CJS gets the intuitively correct verdicts about when suspension and belief are incoherent.

8.2. Credences

Epistemologists usually model credences as having numerical values between 0 and 1 inclusive, where having credence 1 in a proposition is equivalent to being fully certain of its truth (and having credence 0 in it equates to being fully certain of its falsity).²⁴ Moreover, it is widely accepted that an agent's credences are subject to certain coherence requirements. In particular, many philosophers endorse *Probabilism*—namely, the view that one's credences are rational just in case they form a probability function,

²³ Some accounts of suspension incorporate multiple understandings of this idea.

²⁴ According to some philosophers, the credence an agent assigns to a proposition reflects the rate at which they are or should be willing to bet on that proposition being true. More precisely, if an agent has credence x in a proposition p , then they should be willing to pay up to $\$xS$ for a bet that pays $\$S$ if p and $\$0$ if *not* p (see de Finetti 1974; Jeffrey 2004). However, the idea that an agent's credences are closely connected to their betting behavior is controversial. See Eriksson and Hájek 2007 for critical discussion.

in the sense of satisfying the Kolmogorov or probability axioms. These axioms require that one assigns positive credence to any non-contradictory proposition (*Non-negativity*), that one assigns credence 1 to any tautology (*Normality*), and that the credence one assigns to the disjunction of two mutually exclusive propositions be equal to the sum of the credence one assigns to each disjunct (*Finite Additivity*).

Can CJS explain why coherent credences should be probabilistic, in the sense of satisfying these axioms? The answer to this question depends on what the satisfaction conditions for credences turn out to be, which in turn depends on what kind of attitude credences are.

According to some philosophers, credences are just beliefs of a special kind. Namely, they are beliefs about probabilities (Lance 1995; Schiffer 2003, ch. 5; Holton 2014;). On this view, having credence x in p is just believing that the probability of p is x (where this belief deploys some suitable concept of probability). If this view is true, then the satisfaction conditions for credences are the same as for beliefs in general. Credences are satisfied just in case they're true. Moreover, non-probabilistic credences are incoherent according to CJS because there is no possible world where they are all true. For instance, having credence of .7 in p and .4 in *not p* is incoherent because there is no possible world where the probability of p and the probability of *not p* add up to more than 1 (on any concept of probability).

However, the view that credences can be reduced to beliefs about probabilities is controversial. One significant issue is that of whether this view can account for *conditional* credences, that is, credences one assigns to a proposition on the assumption that another proposition holds true. As Lewis's (1976) triviality results suggest, a conditional credence $c(p|q)$ of x can't be assimilated to the belief that if q , then the probability of p is x , or to the belief that the probability of 'If q , then p ' is x (Titelbaum 2019: 10). In light of this and other problems with the reductive view, many philosophers have concluded that the numerical value of credences is a feature of the *attitude* that they embody, not of the attitude's *content*. If so, what can we say about what the satisfaction conditions for credences are?

Like other doxastic attitudes, credences have a mind-to-world direction of fit (Eriksson and Hájek 2007). Hence, it is natural to think that, like all-out beliefs, credences are satisfied in so far as they are *accurate*. Yet, whereas it is clear that beliefs are accurate whenever they're true, it isn't completely clear what it is for credences to be accurate. Indeed, philosophers hold different views concerning the accuracy of credences.

One prominent conception spells out the accuracy of credences in terms of their *gradational accuracy*, that is, their distance from the 'ideal' or 'vindicated' credence in the relevant proposition (Joyce 1998). If p is true, then the ideal or vindicated credence in p is 1, and a credence in p is more accurate the closer it is to 1. Note that, on this way of understanding credal accuracy, credences aren't *categorically* satisfied or unsatisfied. In this respect, they differ from all-out beliefs. Instead, they are satisfied to a greater or lesser extent depending on their distance from the ideal or vindicated credence. The same holds true for *sets* of credences, which can be more or less *jointly* satisfied.

This view of the satisfaction conditions for credence would seem to raise a problem for CJS. As we have formulated it, CJS analyses coherence in terms of joint satisfiability, where this is understood as a categorical notion. A set of attitudes either can or can't be jointly satisfied (without a change in the agent's psychology).

However, the joint satisfiability of a set of credences can't be a categorical matter. As we have seen, in any given possible world, a set of credences is only satisfied or unsatisfied to a certain extent.

We can, however, intelligibly ask about the *relative* joint satisfiability of a set of credences. Let's say that a set of credences c is jointly satisfiable relative to another set c' just in case there is a logically possible world w where the overall accuracy of c is no less than the overall accuracy of c' . This, in turn, suggests a natural way of extending CJS to apply to credences. Namely, a set of credences c is incoherent just in case there is another set c' such that c isn't jointly satisfiable relative c' . In other words, it is necessary and sufficient for having incoherent credences that there be at least one other set of credences open to the agent such that if they had those credences, then they'd be guaranteed to be more accurate in every possible world.

Modified along these lines, CJS can adequately explain why non-probabilistic credences are incoherent. As a variety of accuracy dominance arguments for Probabilism have established, non-probabilistic credences are guaranteed to be *accuracy dominated*. That is, if c is a non-probabilistic set of credences, then there exists a probabilistic set of credences c' such that c' is overall more accurate than c in every possible world (Rosenkrantz 1981, Joyce 1998, Pettigrew 2016). It follows that, according to our modified version of CJS, any non-probabilistic set of credences is incoherent.

To sum up, just as someone with incoherent beliefs is guaranteed to have at least one false belief, however the world turns out to be, someone with incoherent credences is guaranteed to have credences that are less accurate than some other credences they could have, whatever the world is like. In both cases, there is no logically possible world where your attitudes are jointly satisfied. The only difference is that in the case of belief, the guaranteed failure is categorical, whereas in the case of credences, you're guaranteed to fail to be as accurate as possible.²⁵

Finally, a different way of understanding the satisfaction conditions for credences is in terms of *evidential probabilities*, that is, the probabilities of propositions on a given body of evidence (Williamson 2000: ch. 10). According to this idea, credences are accurate whenever they match the agent's evidential probabilities. More precisely, a credence of x in p is satisfied iff $p(p|E) = x$, where E is the agent's total evidence.

On this proposal, CJS seamlessly explains why coherent credences are probabilistic. Non-probabilistic credences are incoherent because they can't be jointly satisfied. There is no possible world where they all match the evidential probabilities. For instance, there is no possible world where $p(p|E) + p(\text{not } p|E) > 1$. Hence, it is incoherent to have credences of .7 in p and .4 in $\text{not } p$.

This last proposal would seem to be open to the following objection. It seems plausible that we should be *permissivists* about the evidential requirements on credences. In other words, we should think that, at least sometimes, your evidence permits a range of different credences in the same proposition. If this is so, then there will be cases where your evidence justifies you in having non-probabilistic sets of credences, because it justifies you in having each credence in the set (Staffel 2020). For example, suppose that your evidence permits any credence in p between .6 and .7, and it permits any

²⁵ The idea of relative joint satisfiability suggests a general formulation of CJS that applies to both categorical and graded attitudes. On this formulation, a set of attitudes is incoherent if and only if it isn't jointly satisfiable relative to some relevant alternative (holding fixed the agent's psychology). Our original version of CJS is a special case of this general formulation. We thank an anonymous reviewer for suggesting this general formulation of our view.

credence in *not p* between .3 and .4. You could, then, justifiably adopt credences of .7 in *p* and of .4 in *not p*.

However, we should be careful to distinguish between the credences you're *justified* in adopting, given your evidence, and the *evidential probabilities*. On different ways of understanding what evidential probabilities are, these two notions seem to come apart. According to Williamson (2000: ch. 10), for instance, evidential probabilities reflect something like the 'intrinsic plausibility' of a hypothesis on a given body of evidence, where this is understood to be an objective, factual notion. In turn, Bayesians think of evidential probabilities in terms of the credence that an ideally rational agent who has certain evidence would assign to a proposition (Eder 2019). On any of these views about evidential probabilities, it seems plausible that these will conform to the probability axioms, even if the credences that (non-ideally rational) agents are justified in having do not.

9. Conclusion

Many philosophers believe that to be rational is (at least in part) to be coherent, that is, to have attitudes that somehow fit well with one another. We have clarified exactly what it takes for mental states to have this property. A set of attitudes is coherent just in case they're able to be jointly satisfied. In other words, attitudes fit well with each other in so far as it is possible for them to fit the world together.

CJS has several virtues. First, it improves upon extant accounts of coherence. Second, it offers us a principled way of resolving disputes between theorists about the right way of formulating coherence requirements. Third, it has surprising and interesting implications concerning the nature of some rational requirements, such as the *Modus Ponens* requirement. Fourth, it provides a unified theory of coherence which accounts for coherence requirements concerning attitudes beyond beliefs and intentions, such as preferences. Finally, it can be extended to make sense of forms of (in)coherence involving non-binary attitudes such as suspension of judgment and credences.

Given its range and scope, we believe that CJS delivers on the promise of providing a general account of coherence. We hope that it will put us in a better position to make progress on several debates about structural rationality and its relationship to psychological coherence.

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