

Formal Coherence is a Myth

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The Logical Norms

Two Problems for Logical Norms

- **Non-Contradiction:** S ought (either not to believe p at t , or not to believe *not- p* at t)
- **Closure:** When p logically entails q , S ought (either not to believe p at t , or to believe q at t)
- Formally,

$$N: O_R(\neg B_{S,t}(p) \vee \neg B_{S,t}(\neg p))$$

$$C: O_R(\neg B_{S,t}(p) \vee B_{S,t}(q))$$
 when p logically implies q where O_R is the 'ought of rationality' and $B_{S,t}(p)$ indicates that agent S believes p at t .

- **Problem of Normativity:** We do not seem to have any good reasons to comply with requirements of formal coherence as such. In particular, the O_R in the logical norms does not reduce to the 'ought of reasons' O_r . An agent can have a set of logically coherent beliefs whose contents are unsupported by her available evidence (Kolodny 2005).
- **Problem of Conflict:** O_R and O_r can pull an agent in opposite directions (e.g., an agent's beliefs in a Preface case).

- The goal of the error theory is to explain the following violation and satisfaction claims:
- **Violation_N**: If $B_{S,t}(p)$ and $B_{S,t}(\neg p)$, then S violates some requirement.
- **Satisfaction_N**: If $B_{S,t}(p)$ and $B_{S,t}(\neg p)$ and S revises either of these beliefs, then S comes to satisfy some requirement.

Kolodny's guiding idea: "The attitudes that reason requires, in any given situation, are formally coherent. Thus, if one has formally incoherent attitudes, it follows that one must be violating some requirement of reason. The problem is not, as the idea of requirements of formal coherence as such suggests, that incoherent attitudes are at odds with each other. It is instead that when attitudes are incoherent, it follows that one of these attitudes is at odds with the reason for it—as it would be even if it were not part of an incoherent set." (*HDCM*, p. 231)

- **Evidentialism**: $\text{Reason}(B_{S,t}(p))$ and $\text{Reason}(\neg B_{S,t}(p))$ only insofar as $E_{S,t}(p) > 0$ and $E_{S,t}(\neg p) > 0$ respectively, where $\text{Reason}(X)$ indicates that there is reason to X and $E_{S,t}(p)$ indicates the degree of evidential support for p given S's total accessible evidence at t .
- **Stronger Evidence**: $O_r(\neg B_{S,t}(p))$ if $E_{S,t}(\neg p) \geq E_{S,t}(p)$.
- **R1**: $O_r(\neg B_{S,t}(p))$ or $O_r(\neg B_{S,t}(\neg p))$.
- So if $B_{S,t}(p)$ and $B_{S,t}(\neg p)$, then according to R1, S violates a requirement of reason.

- **Second-Order Requirement₁**: If $B_{S,t}(p)$ and $B_{S,t}(\neg p)$, then $O_{r/R}(B_{S,t}(B_{S,t}(p)) \wedge B_{S,t}(B_{S,t}(\neg p)) \wedge B_{S,t}(R1))$.
- **Second-Order Requirement₂**: If $B_{S,t}(p)$ and $B_{S,t}(\neg p)$, then $O_{r/R}(S \text{ attempts to decide which belief reason permits})$.
- **Believed Reason**: If $B_{S,t}(O_r(B_{S,t}(p)))$, then $O_R(B_{S,t}(p))$. If $B_{S,t}(O_r(\neg B_{S,t}(p)))$, then $O_R(\neg B_{S,t}(p))$. If there is a 'live doubt' at t whether reason permits $B_{S,t}(p)$, then $O_R(\neg B_{S,t}(p))$.

Explaining Satisfaction_N

- If S satisfies SOR_1 and/or SOR_2 together with Believed Reason, S will revise her belief that p , revise her belief that $\neg p$, or both.
- The converse is also taken to hold: If $B_{S,t}(p)$ and $B_{S,t}(\neg p)$ and S revises *either* of these beliefs, then S satisfies at least one of the SORs and Believed Reason.

The Error Theory for C

- The goal of the error theory is to explain the following violation and satisfaction claims:
- **Violation_C**: When p logically entails q and $B_{S,t}(p)$ and $\neg B_{S,t}(q)$, then S violates some requirement.
- **Satisfaction_C**: When p logically entails q and $B_{S,t}(p)$ and $\neg B_{S,t}(q)$ and S revises her belief that p or forms the belief that q , then S comes to satisfy some requirement.

Explaining Violation_C

- **Evidence Transmission**: When p logically entails q , $E_{S,t}(q) \geq E_{S,t}(p)$.
- **Epistemic Strictness**: $O_r(B_{S,t}(p))$ or $O_r(\neg B_{S,t}(p))$.
- **R2**: When p logically entails q , $O_r(\neg B_{S,t}(p))$ or $O_r(B_{S,t}(q))$.
- So when p logically entails q and $B_{S,t}(p)$ and $\neg B_{S,t}(q)$, then according to R2, S violates a requirement of reason.

Explaining Satisfaction_C

- **Second-Order Requirement₃**: If p logically entails q , $B_{S,t}(p)$ and $\neg B_{S,t}(q)$, then $O_{r/R}(B_{S,t}(B_{S,t}(p)) \wedge B_{S,t}(\neg B_{S,t}(q)) \wedge B_{S,t}(R2))$.
- **Second-Order Requirement₄**: If p logically entails q , $B_{S,t}(p)$ and $\neg B_{S,t}(q)$, then $O_{r/R}(S \text{ attempts to decide whether reason permits believing that } p \text{ and/or requires believing that } q)$.
- **Believed Reason**: If $B_{S,t}(O_r(B_{S,t}(p)))$, then $O_R(B_{S,t}(p))$. If $B_{S,t}(O_r(\neg B_{S,t}(p)))$, then $O_R(\neg B_{S,t}(p))$. If there is a 'live doubt' at t whether reason permits $B_{S,t}(p)$, then $O_R(\neg B_{S,t}(p))$.

Explaining Satisfaction_c

- If S satisfies SOR_3 and/or SOR_4 together with Believed Reason, S will revise her belief that p or come to believe that q .
- The converse is also taken to hold: When p logically entails q and $B_{S,t}(p)$ and $\neg B_{S,t}(q)$ and S revises her belief that p or forms the belief that q , then S satisfies at least one of the $SORs$ and Believed Reason.

Kolodny's conclusion

"How does logic govern belief? [A logical coherence norm] represents one answer: that logic somehow governs belief directly, such that if our beliefs are not consistent and closed, we violate some norm. Our discussion of $R1$ and $R2$ represents a different answer: that logic governs belief indirectly, by structuring epistemic reason, which in turn directly governs belief. On this view, logic, so to speak, informs epistemic reason of possible patterns of truth and falsity. Epistemic reason takes these patterns into account in determining how best to pursue the aims of acquiring truth and avoiding falsity in light of the evidence...

Kolodny's conclusion

...For example, the simple facts that if *not-p* is true, then p is false, and that if q is a logical consequence of p , then if p is true, q is true, underlie the evidential principles [Stronger Evidence] and [Evidence Transmission], which in turn explain $R1$ and $R2$. The fact that epistemic reason takes into account the implications of logical relations for patterns of truth and falsity, however, does not imply that epistemic reason always requires a pattern of belief that is itself illogical. There remains the possibility that we best pursue the aims of acquiring truth and avoiding falsity, on the basis of information that logic gives us about the possible patterns of truth and falsity, by adopting a pattern of belief that is not itself logical...

Kolodny's conclusion

...If the preface and lottery cases are telling, then this possibility is actual. The question, then, is whether, as [a logical coherence norm] implies, logic does double duty, not only structuring what epistemic reason requires, but also placing an independent constraint on belief that sometimes countermands what epistemic reason requires. This begins to seem like a fetish for a certain mental pattern." (*HDCM*, p. 255)

Kolodny's disclaimer

"I am not confident that I rule out the more pessimistic, if more interesting answer: that while we cannot find a place for requirements of formal coherence as such, we cannot do without them either." (*HDCM*, p. 232)

Objection 1: Can't Get No Satisfaction

If $B_{S,t}(p)$ and $B_{S,t}(\neg p)$ and S satisfies one of the Second-Order Requirements and Believed Reason, then S will revise her belief that p , revise her belief that *not*- p , or both. So far so good. But why should we accept the converse statement needed for the error theory to go through? If $B_{S,t}(p)$ and $B_{S,t}(\neg p)$ and S revises either of these beliefs, why does it follow that S satisfies one of the Second-Order Requirements and Believed Reason? A crucial piece of the argument is missing.

Objection 1: Can't Get No Satisfaction

Kolodny does recognize the worry and admits that *unreflective* and *akratic* cases pose a serious problem for his error theory. First, an agent may remove incoherence in her belief set by acting against her beliefs about what reason requires, i.e., failing to satisfy Believed Reason. Second, an agent may also remove incoherence in her belief set without even reflecting on her beliefs and/or what reason requires of her, i.e., failing to satisfy the Second-Order Requirements. Consider an agent who believes that 'All men are mortal' and reasons to the conclusion that 'If Socrates is a man, then Socrates is mortal'. Though the agent seems to satisfy some requirement by forming this latter belief, will such an agent really first come to believe things about what she believes and what her evidence sufficiently or insufficiently supports before coming to believe this conditional?

Objection 1: Can't Get No Satisfaction

Kolodny suggests that in unreflective and akratic cases, an agent may still manifest an unconscious disposition (e.g., a disposition to form a belief that p in circumstances where reason requires her to believe that p) that qualifies her for positive appraisal. But he admits that there's no guarantee that an agent will manifest such a praiseworthy disposition in every case.

Objection 2: Epistemic Permissiveness

Epistemic Strictness is a very strong assumption. Even if one agrees that reason cannot be *too* permissive—i.e., reason cannot permit an agent to believe that *p* and permit an agent to believe that *not-p* for any *p*—one might still reject this assumption. When considering *whether p*, Epistemic Strictness says that S must make up her mind. But can't reason simply permit but not require S to believe that *p* in at least some cases?

Objection 3: Transmission Failure

Even when *p* logically implies *q*, some reasons (evidence) for believing that *p* are not reasons (evidence) for believing that *q*.

Objection 3: Transmission Failure

Consider this example from Fred Dretske (2005):
"In normal circumstances—a wine tasting party, say—one's reasons for thinking there is wine left in the bottle do not transmit to, they are not reasons for believing, what you know to be implied by this—that the liquid in the bottle is not merely colored water. Having already tasted it, you may know that it is wine and not just colored water, but the point is that your reasons for believing the one (visual) are not reasons for believing the other (gustatory). Colored water in the bottle would look exactly the same as the wine. The reasons you have for believing what you say you perceive (there is wine left in the bottle) are not *transmitted* to this known consequence (that it is not merely colored water) of what you perceive."

Objection 3: Transmission Failure

Let *p* be the conjunction of 'There is wine left in the bottle' and the conditional 'If there is wine left in the bottle, then there is not colored water left in the bottle' and *q* be 'There is not colored water left in the bottle'. Though I have slightly modified his example, Dretske's point is that though *p* logically implies *q*, the visual reasons (evidence) one has for believing that *p* aren't reasons (evidence) for believing that *q*. In this case, one still has other gustatory reasons (evidence) for believing that *q*. But one might worry that since specific reasons need not transmit across logical consequence relations, Epistemic Transmission can fail.

Objection 4: Multi-Premise Norms

- **MP-Consistency:** When $p_1 \dots p_n$ are logically inconsistent, S ought (either not to believe p_1 at t, \dots , or not to believe p_{n-1} at t , or not to believe p_n at t).
- **MP-Closure:** When $p_1 \dots p_{n-1}$ logically imply p_n , S ought (either not to believe p_1 at t, \dots , or not to believe p_{n-1} at t , or to believe p_n at t).
- There are violation and satisfaction claims for MP-Consistency and MP-Closure analogous to Violation_N, Satisfaction_N, Violation_C and Satisfaction_C.

Objection 4: Multi-Premise Norms

If something like Evidence Transmission is needed to explain the new violation claims, then the error theory can't go through. In a Preface or Lottery case, S's available body of evidence strongly supports a series of individual propositions $p_1 \dots p_{n-1}$ (claims made in the body of a text or claims that particular lottery tickets will not win) but does not support their conjunction $p_1 \wedge \dots \wedge p_{n-1}$ (call this p_n). So reason permits S to believe each of $p_1 \dots p_{n-1}$ but reason forbids S to believe p_n and may actually require S to believe *not- p_n* or some proposition logically equivalent to *not- p_n* should it come to mind.

Objection 4: Multi-Premise Norms

Kolodny thinks Violation_{MP-C}, Satisfaction_{MP-N}, etc. are 'overgeneralizations of a kind': having developed certain violation intuitions in garden-variety cases where disjunctions of narrow-scope requirements of reason are easily confused with wide-scope rational requirements of formal coherence as such, we extend these intuitions to cases where reason does not in fact require an agent to have formally coherent beliefs.

Objection 4: Multi-Premise Norms

But consider an 'ordinary' multi-premise case where p_1 and p_2 together logically entail p_3 , the evidential demands for the questions *whether p_1* , *whether p_2* and *whether p_3* are identical and $E_{S,t}(p_1)$ and $E_{S,t}(p_2)$ are just high enough so that $O_r(B_{S,t}(p_1))$ and $O_r(B_{S,t}(p_2))$. If $E_{S,t}(p_3) < E_{S,t}(p_1)$, $O_r(\neg B_{S,t}(p_3))$ so the requirements of (epistemic) reason come apart from MP-Closure. Kolodny must thus allow for a high degree of overgeneralization to explain all of the relevant violation intuitions. One might worry that Kolodny's error theory isn't doing enough work.

Objection 4: Multi-Premise Norms

Here's a toy example.

- Let $E_{S,t}(p)$ be given by the conditional probability $P(p|E_{S,t}^*)$ where $E_{S,t}^*$ is S's total accessible evidence at t . Assume that for any p , $O_r(B_{S,t}(p))$ if and only if $P(p|E_{S,t}^*) \geq 0.8$:
- S believes A: If Wynton Marsalis is performing at Carnegie Hall, then the show is sold out.
Let $P(A|E_{S,t}^*) = 0.8$ so $O_r(B_{S,t}(A))$.
- S believes B: Wynton Marsalis is performing at Carnegie Hall.
Let $P(B|E_{S,t}^*) = 0.8$ so $O_r(B_{S,t}(B))$.

Objection 4: Multi-Premise Norms

- S is deliberating whether C: The show at Carnegie Hall is sold out.
- Since A and B logically entail C, $P(C|E_{S,t}^*) \geq P(A \wedge B|E_{S,t}^*) = P(A|E_{S,t}^*) + P(B|E_{S,t}^*) - P(A \vee B|E_{S,t}^*)$ so unless $P(A \vee B|E_{S,t}^*) = P(A|E_{S,t}^*) = P(B|E_{S,t}^*) = 0.8$, it's possible that $P(C|E_{S,t}^*) < 0.8$ and $\neg O_r(B_{S,t}(C))$.
- If $\neg O_r(B_{S,t}(C))$, Kolodny's appeal to evidential norms can't explain the intuition that if S does not come to believe that C, then S violates some requirement.

Objection 5: The Priority of Rationality

According to some influential philosophical accounts, the requirements of rationality are needed to make sense of reasons. Christine Korsgaard (1996), for example, conceives of the principles of rationality as constitutive of the will. It's by exercising her rational will that an agent confers the status of being a reason on particular features of the world. If the core of this Kantian picture is correct, then rationality is prior to reasons. Kolodny's attempt to explain away rational requirements in terms of what reason requires gets the order of explanation wrong.

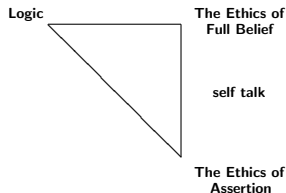
Objection 5: The Priority of Rationality

Even if one accepts the general structure of Korsgaard's Kantian theory, it's not clear why the principles of rationality that are constitutive of the will are wide-scope formal coherence requirements rather than, say, the narrow scope rational requirements in Believed Reason. Instead of thinking of the rational requirements contained in Believed Reason as the 'psychological shadows' cast by the requirements of reason, perhaps we should think of requirements of reason as the 'objective shadows' cast by the principles of rationality that are constitutive of the will.

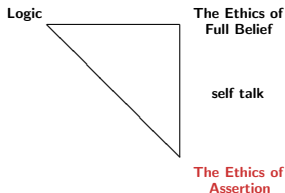
Towards a New Error Theory

Can we come up with another theory of error that does not require a high degree of self-reflection by agents who comply with Believed Reason and does not rest on problematic assumptions like Epistemic Strictness and Epistemic Transmission? Note that the alternative theory need not be a replacement for the error theory presented by Kolodny. Rather, the second error theory might reinforce the first theory, explaining violation and satisfaction claims that the first error theory cannot explain. After all, if 'The Myth of Formal Coherence' is indeed a myth, it's a compelling one that has existed in our philosophical tradition for hundreds of years. It should come as no surprise that dispelling it may take quite a bit of work.

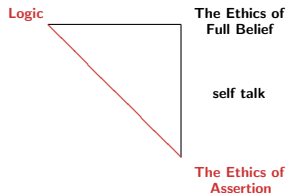
A Road Map of the Project



A Road Map of the Project

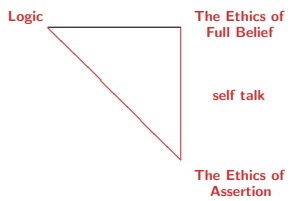


A Road Map of the Project



A Road Map of the Project

Normative Content and Force



A full investigation into the normativity of assertion must address two basic questions.

- *The Question of Content*: What do the norms of assertion require a speaker to do?
- *The Question of Force*: Why must a speaker comply with the norms of assertion?

Content: Upstream Norms

Content: Upstream Norms

Upstream norms specify when a speaker is required or forbidden to make an assertion:

- One must: assert that p if C
- One must: assert that p only if C

where p is a speech-act content and C is the condition under which a speaker should assert that p or should otherwise refrain from asserting that p .

Some examples of upstream proscriptive norms in the literature:

- **Truth Rule**: One must: assert that p only if p is true. (Weiner 2005)
- **Reasonable to Believe Rule**: One must: assert that p only if it is reasonable to believe that p . (Lackey 2007)
- **Knowledge Rule**: One must: assert that p only if one knows that p . (Williamson 1996/2000)

Content: Downstream Norms

Downstream norms specify how making an assertion changes a speaker's normative status. I'll focus on norms with the following nested structure:

- If one asserts that p , then: if C , one must $\phi(p)$

where p is a speech-act content and C is the condition under which a speaker who has previously asserted that p is obligated to perform the task $\phi(p)$. Brandom (1994) calls such norms 'conditional task responsibilities'.

Content: Downstream Norms

Some examples of downstream norms in the literature (MacFarlane 2005):

- **Retraction:** If one asserts that p , then: if p is shown to be untrue, one must withdraw one's (unretracted) assertion that p .
- **Justification:** If one asserts that p , then: if this assertion is appropriately challenged, one must justify p (i.e., provide grounds for the truth of p).
- **Responsibility:** If one asserts that p , then: if on the basis of this assertion someone else acts on or reasons from p , one must accept responsibility for their taking p to be true.

Normative Force

Possible reasons to assert or retract:

- **Intrinsic Reasons:** S has reason to comply with the norms of assertion since doing so is valuable for its own sake.
- **Constitutive Reasons:** S has reason to comply with the norms of assertion since doing so allows S to maintain her status as an assertor.
- **Perlocutionary Reasons:** S has reason to comply with the norms of assertion since S has moral reason to lead others to have true beliefs and not to lead others to have false beliefs.
- **Conventional Reasons:** S has reason to comply with the norms of assertion since S has moral reason not to undermine or exploit a just and valuable social practice whose fruits S has voluntarily chosen to enjoy.

T. M. Scanlon on Promising

In his chapter on promises in *What We Owe Each Other* (1998), T. M. Scanlon introduces these principles:

- **Principle of Due Care:** One must exercise due care not to lead others to form reasonable but false expectations about what one will do when one has good reason to believe that they would suffer significant loss as a result of relying on these expectations. (p. 300)
- **Principle of Loss Prevention:** If one has intentionally or negligently led someone to expect that one is going to follow a certain course of action, X , and one has good reason to believe that that person will suffer significant loss as a result of this expectation if one does not follow X , then one must take reasonable steps to prevent that loss. (p. 300-1)

T. M. Scanlon on Promising

The Norms of Assertion

The Principle of Due Care and The Principle of Loss Prevention can be generalized:

- **Principle D***: One must exercise due care not to lead others to form a false belief about some matter and not to confirm a false belief that they may already hold when one has good reason to believe that they would suffer significant loss as a result of relying on this belief.
- **Principle L***: If one has intentionally or negligently led someone to form a belief or confirmed a belief that they may already hold and one has good reason to believe that that person will suffer significant loss if this belief is false, then one must take reasonable steps to prevent that loss.
- Upstream cautionary norms for assertion are subsumed under Principle D*.
- Downstream norms are subsumed under Principle L*.
- The fundamental norms of assertion are not specialized norms *specific* to assertion. Rather, assertion is governed by general moral principles that also apply to other speech acts and non-speech acts.

The Norms of Assertion

The Norms of Assertion

The moral principles D* and L* can be given a Scanlonian contractualist justification: Information is valuable. If one provides the information that *p*, perhaps by asserting that *p*, a recipient will want to be able to rely on this information by potentially using *p* as a premise in theoretical or practical reasoning. If *p* is false, then by reasoning from *p*, the recipient may form many other false beliefs and may make non-optimal decisions that thwart or impair her ability to realize her life goals. Recipients of information thus have good reason to accept D* and L*. On the other hand, information providers, though they may have good reason to reject principles *requiring* them to provide valuable information to others, have little reason to reject either of these principles.

In addition to the perlocutionary reasons underwritten by the moral principles D* and L*, speakers also have conventional reasons to assert, retract, etc. Assertion is clearly a valuable social practice and speakers ought not weaken or abuse this practice.

The Norms of Assertion

What is the required amount of 'due care'? What are 'reasonable steps' to prevent loss? By flat-out asserting that p rather than suggesting that p , asserting 'I believe that p ', asserting 'It's likely that p ', etc., S signals to the hearer that she has particularly strong evidence that p , typically, that she knows that p . I.e., S represents herself as knowing that p . So in most contexts c , S exercises 'due care' in asserting that p in c when S reasonably believes that she knows that p in c . In most contexts, a 'reasonable step' to prevent loss amounts to retracting a previous (unretracted) assertion that p in c when S does not reasonably believe that she knows that p in c .

The Norms of Assertion

Is this just a form of 'The Myth of Formal Coherence'?
No. Kolodny's error theory casts doubt on the idea that belief 'aims at coherence' in addition to (or instead of) truth. But recall that on Kolodny's theory, a great deal of logical coherence already falls out of our aiming at truth. Since logical relations inform the structure of an agent's evidence, the belief set of a theoretical reasoner who responds appropriately to her evidence will exhibit a high degree of logical coherence. The claim here is only that we generally take our linguistic peers to form and revise beliefs in accordance with epistemic reason and we endorse a (restricted) Closure Principle for Knowledge.

The Norms of Assertion

Thus in asserting that p in a typical context, S signals that:

- p is true.
- S knows that p , $K_{S,t}(p)$ Anything else?
- S doesn't believe that *not*- p , $\neg B_{S,t}(\neg p)$.
- For some q that are logically inconsistent with p (and the contents of S 's other unretracted assertions), S doesn't believe that q , $\neg B_{S,t}(q)$.
- For some logical consequences q of p (and the contents of S 's other unretracted assertions), S knows that q or will come to know that q upon considering *whether* q , $K_{S,t}^*(q)$.

Marsalis Redux

Let's return to the Carnegie Hall example.

- This time S asserts that A: If Wynton Marsalis is performing at Carnegie Hall, then the show is sold out.
- As before, let $P(A|E_{S,t}^*) = 0.8$ so $O_r(B_{S,t}(A))$.
- S also asserts that B: Wynton Marsalis is performing at Carnegie Hall.
- As before, let $P(B|E_{S,t}^*) = 0.8$ so $O_r(B_{S,t}(B))$.
- S does *not* assert that C: The show at Carnegie Hall is sold out.
- Now assume that $P(C|E_{S,t}^*) < 0.8$ so $\neg O_r(B_{S,t}(C))$.

Marsalis Redux

- By asserting that A, S signals $K_{S,t}(A)$.
- By asserting that B, S signals $K_{S,t}(B)$.
- By asserting A and B together, S signals $K_{S,t}^*(C)$. The inference from A and B to C is simple enough that a hearer can reasonably expect S to competently deduce C from A and B upon considering *whether* C.

Marsalis Redux

If S forms the belief that C...

- Since $P(C|E_{S,t}^*) < 0.8$ and $\neg O_r(B_{S,t}(C))$, S violates a narrow-scope requirement of epistemic reason.
- But since S has signaled $K_{S,t}^*(C)$, S also goes some way towards avoiding misrepresenting herself. Assume that a hearer H believes that S knows that C or would come to know that C upon considering *whether* C, and S has good reason to believe that H will suffer a significant loss if $\neg B_{S,t}^*(C)$. Then it's tempting to think that by coming to believe that C, S satisfies Principle L*. However, Principle L* calls for action—retraction, etc.—not changes in belief state. And it's certainly strange to think that S's change of view is morally praiseworthy if S intentionally forms the belief that C by popping a belief-forming pill.

Marsalis Redux

Still, is there *any* sense in which S ought to believe that C and so stand by what she has signaled to H?

From the hearer H's perspective, it will certainly seem so. Since $B_{H,t}(K_{S,t}^*(C))$, $B_{H,t}(O_r(B_{S,t}(C)))$. So from H's perspective, when S comes to believe that C, S satisfies a narrow-scope requirement of epistemic reason. Of course, since $P(C|E_{S,t}^*) < 0.8$, S actually violates a narrow-scope requirement of epistemic reason. But given what S has signaled to H about her evidential state, H believes that epistemic reason requires S to believe that C upon considering *whether* C.

Judgment in Reasoning

Theoretical reasoning is generally driven by acts of *judgment*. John Broome (2006) calls such acts a kind of 'saying to yourself':

"You believe it is raining, and you believe that if it is raining the snow will melt but you do not believe that the snow will melt. So you do not satisfy the requirement *Modus ponens* in this instance. But you can bring yourself to satisfy it by saying to yourself that:

Judgment in Reasoning

It is raining.
 If it is raining the snow will melt.
 So the snow will melt.

Here, I have written down a sequence of sentences, which designate propositions. You do not necessarily say the sentences to yourself; you might reason in Swedish, say. But you do say to yourself the propositions that these sentences designate. You say to yourself that it is raining, and that if it is raining the snow will melt, and then you say that the snow will melt...

Judgment in Reasoning

You initially believe the first two of these propositions; in saying them to yourself you are expressing your beliefs. You do not initially believe the third. But when you say it to yourself, you express a belief in it. By the time you come to say it, your reasoning has brought you to believe it. By this time, you satisfy *Modus ponens*...

Judgment in Reasoning

Saying something to yourself is an act. Sometimes no doubt, you say things to yourself out loud, but more often you do it silently. In that case, I could alternatively have said you call the proposition to mind; 'saying to yourself' is just a more graphic way of describing what you do. One thing it does it bring the beliefs together, if you have not previously done that in your mind." (p. X)

Judgment in Reasoning

Formally, Broome's example is:

- B_{S,t_1} (It is raining)
- B_{S,t_1} (If it is raining the snow will melt)
- J_{S,t_1} (It is raining)
- J_{S,t_2} (If it is raining the snow will melt)
- J_{S,t_3} (The snow will melt)
- B_{S,t_3} (The snow will melt)

where $J_{S,t}(p)$ indicates that agent S judges that p at t and $t_1 < t_2 < t_3$. The steps 1-6 are not a *formal proof* but a description of a *causal chain* in which certain mental events (believing or judging that such and such is the case) cause certain other mental events to occur.

Judgment in Reasoning

Broome thinks that "when you say it to yourself, you express a belief in it" (p , X). He seems to be thinking of judgment as a kind of 'internal asserting' where the account of assertion that he has in mind is one where to assert that p is to express a belief that p .

The Bridge between Asserting and Theoretical Reasoning:
I will also regard judgment as a kind of 'self talk'. Notwithstanding significant differences between asserting and internal reasoning, I regard an episode of theoretical reasoning as a kind of *conversation with oneself*.

The New Error Theory for C

- Recall that the goal of the error theory is to explain the following violation and satisfaction claims:
- **Violation_C:** When p logically entails q and $B_{S,t}(p)$ and $\neg B_{S,t}(q)$, then S violates some requirement.
- **Satisfaction_C:** When p logically entails q and $B_{S,t}(p)$ and $\neg B_{S,t}(q)$ and S revises her belief that p or forms the belief that q , then S comes to satisfy some requirement.

Explaining Violation_C

- $B_{S,t}(p)$ is activated in reasoning by the judgment $J_{S,t}(p)$.
- By judging that p , S signals $K_{S,t}(p)$.
- Since p logically entails q , S also signals $K_{S,t}^*(q)$.
- So for a hearer H , $B_{H,t}(O_r(B_{S,t}(q)))$. But in the case of reasoning, $H = S$. From S 's perspective as hearer, then, $O_r(B_{S,t}(q))$.
- So when p logically entails q , $J_{S,t}(p)$, S considers *whether* q , S competently deduces q from p , $\neg B_{S,t}(q)$ and S retains her belief that p , S misrepresents herself. From S 's perspective as hearer, S will also *seem* to violate a requirement of epistemic reason. (note the similarity with Kolodny's 'Transparency Account' for Believed Reason)

Explaining Satisfaction_C

- When p logically entails q , $B_{S,t}(p)$, $\neg B_{S,t}(q)$, S judges that p in reasoning and S subsequently forms the belief that q , then S goes some way towards avoiding misrepresenting herself. From S 's perspective as hearer, S will *seem* to satisfy a requirement of epistemic reason.
- If S does not come to believe that q but instead revises her belief that p , this is a kind of 'internal retraction' and S again avoids misrepresenting herself. S cancels her signal that $K_{S,t}^*(q)$ so from S 's perspective as hearer, S will *seem* to avoid violating a requirement of epistemic requirement. Also, S may *seem* to satisfy an internalized version of Principle L*.

A Remaining Difficulty

What if S judges that p and judges that *not- q* ?

Does S send the contradictory signals $K_{S,t}^*(q)$ and $\neg K_{S,t}^*(q)$ and so represent herself as having incoherent attitudes and dispositions, or do these signals *cancel out* (as with implicatures)?

If the former, the error theory goes through.

If the latter, the error theory doesn't go through.

We might still explain Violation_C by appealing to an internalized version of Principle D^* but explaining Satisfaction_C remains a problem.

Virtues of the New Theory

- **Got Satisfaction:** can explain Satisfaction_C , Satisfaction_N , etc. in akratic and unreflective cases.
- **Epistemic Permissiveness:** the new theory does not assume that Epistemic Strictness holds.
- **Multi-Premise Cases:** the new theory can explain violation and satisfaction claims in multi-premise cases that Kolodny's theory is unable to explain (e.g., Carnegie Hall).

Objection 1: Signaling Knowledge

A speaker who asserts that p in a typical context does not thereby signal $K_{S,t}^*(q)$ for *all* logical consequences q of p . So the new theory can't explain violation and satisfaction claims concerning far-removed consequences of p .

Reply: Violation_C and Satisfaction_C do not hold for such far-removed q . Advocates of wide-scope logical coherence requirements generally endorse only restricted versions of these principles. For example, Hartry Field's (2009) closure principle only applies to 'obvious' entailments.

Objection 2: Coherence Without Reasoning

The new theory only applies to beliefs that are activated in the course of theoretical reasoning. But Violation_C and Satisfaction_C apply to all beliefs whether they are activated in reasoning or not.

Reply: Many cases where an agent S is taken to violate or satisfy a logical coherence requirement are cases where S is engaged in theoretical reasoning or where someone else is reasoning from S 's perspective. My theory covers these cases. Also, my theory is intended to *supplement* rather than *replace* Kolodny's theory that can handle cases outside of reasoning.

Objection 3: Reasoning Without Judgment

Are all episodes of theoretical reasoning driven by acts of judgment? The assimilation of theoretical reasoning to a kind of internal conversation is an artificial picture that distorts how we really go about changing our view.

Reply: I do not think that an act of judgment must be a 'speaking in one's heart'. There are certainly cases where we explicitly talk to ourselves in silence in the same way that we would talk to a linguistic peer. But 'self talk' is meant to cover all cases where we bring a particular content p to mind (i.e., activate p) in some form and acknowledge the truth of p . My use of the term 'self talk' is intended to emphasize the strong connections that exist between such mental acts of attention/acknowledgment and speech acts like assertion.

Objection 4: Norms for Assertion Do Not Internalize

Judgment is not governed by the moral principles that govern assertion. Part of the utility of 'self talk' is that it allows us to acknowledge the truth of a content in private. We engage in theoretical reasoning, in part, so that we can sort out our beliefs *before* we manifest them publicly by making assertions (so before we are subject to the moral principles governing assertion).

Reply: An error theory for the existence of logical coherence requirements does not require the strong claim that judgment is governed by the norms of assertion. It's enough that an agent is sensitive to these norms while engaged in reasoning. I find this weaker claim eminently plausible.