

Belief is Messy

Dissertation Summary
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My thesis navigates the complexities of belief across three central areas. In each case, I argue that the reality underlying belief is far messier than has yet been appreciated. Despite this messiness, I demonstrate that systematic theorising about belief remains not only possible, but fruitful. Chapters 1 and 2 concern belief revision theory, Chapter 3 concerns beliefs formed by induction, and Chapter 4 concerns the thesis that belief is ‘weak’ — the claim that rational belief is compatible with low confidence.

Chapter 1 - Belief Revision Revised. I challenge existing theories of belief revision by appealing to two ideas. First, beliefs can be justified even if there is some non-zero probability they are false — such as that it will rain sometime in the next month, that your partner will be home from work within the next two hours, or that this fair coin will land heads sooner or later if flipped enough times. Second, rational patterns of belief revision ought not reflect the gambler’s fallacy — observing the fair coin land tails, for example, should not make you expect a heads to occur any sooner than you previously thought. I show that if both ideas are right, there exist cases of “anticipation failure” — cases in which one is justified in believing q , even though one would lose this justification were one to learn p and one would lose this justification were one to learn $\text{not-}p$. No existing theory can accommodate my cases of anticipation failure and so must give up one of the above two ideas. I outline a new theory that preserves these two ideas and thus embraces anticipation failure. This theory is predicated on the simple idea that one is justified in ruling a possibility out whenever that possibility is sufficiently unlikely.

Chapter 2 - Composing Composers. I argue that the theory in Chapter 1 can be applied to solve a puzzling phenomenon concerning belief revision, illustrated by Stalnaker’s case ‘Composers’. Suppose you believe on independent grounds that Verdi is Italian, Bizet is French, and Satie is French. To your surprise, you then learn that all three composers are compatriots. It’s unclear how your beliefs should be revised. Should you be *cautious*, and become ambivalent as to whether all three composers are French or Italian? Or should you be *bold*, and conclude that all three composers are French? Existing theories of belief revision tend to exclusively vindicate either becoming *cautious* or *bold*, ruling the other reaction irrational. But this is undesirable: *both* reactions look reasonable. In contrast, my theory desirably predicts that both

cautious and *bold* can be permissible, where which is to be preferred depends one's standards for how unlikely a possibility has to be for it to be ruled out.

Chapter 3 - Asymmetric Inductive Knowledge. Consider Alice, who is unsure whether the urn in front of her is 'Uniform' and contains 1,000 marbles, or is 'Mixed' and contains 500 green and 500 blue marbles. She randomly samples 100 marbles, sees that they are all green, and believes on this basis that the urn is Uniform. Anti-skeptics should concede that in at least some version of this case, Alice's belief can constitute knowledge. I argue that this anti-skeptical position is only tenable if we maintain that Alice's knowledge is asymmetric in various surprising ways. One such striking asymmetry implies a kind of *ego-centrism*; for instance, I argue that while Alice can know before looking at her sample that *if all the marbles in her sample are green, the urn is Uniform*, she is, surprisingly, not able to know that of some other equally-sized random sample *S* that *if all the marbles in S are green, the urn is Uniform*. This raises a puzzle: can any plausible theory of justified belief accommodate such bizarre asymmetries? I show how the theory defended in Chapter 1 solves this puzzle. This theory is most plausible when what counts as a "possibility" is sensitive to a relevant partition, and these partitions can be used to encode the asymmetries of inductive knowledge I argue for. Inductive knowledge is possible, but it is surprisingly asymmetric.

Chapter 4 - A Puzzle About Weak Belief. (Forthcoming in *Analysis*.) According to the increasingly popular thesis that belief is 'weak', one can rationally believe a proposition even if one has low confidence in its truth. This thesis is motivated using felicitous belief ascriptions. For example, consider a game with a 10-sided die in which Alice wins if the die lands 1 through 3 (30% chance), Bob wins if it lands 4 through 7 (40% chance), and Charlie wins if it lands 8 through 10 (30% chance). Bob is the favorite, so it looks perfectly reasonable to say "I believe Bob will win", even though his victory is only 40% likely. Proponents of weak belief take this as strong evidence for their thesis. However, I argue that extending this methodology to beliefs in conditionals raises a puzzle. "I believe that if the die lands on 5 or less, Alice will win" looks just as reasonable as the belief that Bob will win — Alice is 60% likely to win if the die lands on 5 or less. The same goes for "I believe that if the die lands greater than 5, Charlie will win." But if one can rationally believe both conditionals, one will also be in a position to infer that Bob will *lose*, in contrast to the purportedly rational belief that Bob will win. Proponents of weak belief therefore either cannot extend their methodology to beliefs in conditionals, or they must deny that beliefs in conditionals can be used in reasoning. Either way, the relationship between belief ascriptions and rational belief is far messier than they suppose. I aim to solve this puzzle raised by conditionals in further research.