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Start with probabilities

Update by conditionalisation

Do we do AGM? Probably not.

- But two big puzzles
- One is update on 'impossible' evidence
- Other is contraction
- Arguably one solution will work for both
- Impossible update = contraction plus update
- That's contentious - not obviously a definition - but plausble

Like-mindedness

- Common prior
- That's what we end up with

What Aumann's theory states

- If there is a common prior, and it is common knowledge what the posteriors are, the posteriors must be equal.

Other versions of Aumann

- Can't have common knowledge of expectation
- Can't have common knowledge of which side of expectation
- Can have common knowledge of non-agreement on expectation (including probability)
- Can't have common knowledge of average of probabilities!
- Can't have common knowledge of action, given common action plan and common prior - but this is tricky, and requires some strong assumptions about plans - in particular requires a strong version of Sure Thing Principle
- No trade theorems (though these are a bit boring)

Need common prior

- Trivial to get counterexamples without it
- Just have no information, and distinct priors and done
- I mean, it's a bit tougher than that, but that's roughly the idea

What about with just S4

- That's trickier, because don't often have perfect knowledge of own probability!
- But what if you do?
- I don't know. Sob. Sob.