

## How Many Beliefs to Ascribe?

**Not too many** Sensible people don't believe all the logical consequences of their beliefs. They don't believe blatant inconsistencies. Nor they believe all mathematical truths (not even all provable ones).

**Not too few** Sensible people don't fail to believe the obvious logical consequences of their beliefs.

## A Sorites Argument

Suppose we have a set  $\Gamma$  of propositions, each of which Rachael believes. And suppose we have a proposition  $\phi$  which can be deduced from  $\Gamma$  in 1,000 steps, which Rachael does not believe.

**Faith** Rachael believes every proposition that can be deduced from  $\Gamma$  in 0 steps.

**Charity** If Rachael believes every proposition that can be deduced from  $\Gamma$  in  $n$  steps, then Rachael believes every proposition that can be deduced from  $\Gamma$  in  $n + 1$  steps.

**Honesty** Rachael does not believe  $\phi$ .

Our options:

**Reject Faith** Join the Churchlands, or the Quineans.

**Reject Honesty** The classical solution.

**Revise Our Logic** Pretty serious—we'll have to give up on either *modus ponens* or cut.

**Reject Charity** Mark's solution. He keeps Charity alive in spirit by not permitting any  $n$  to determinately witness its falsity.

Mark models beliefs using worlds that are epistemically possible, but alethically impossible. There are two different kinds of alethic impossibility, and we need both.

**The Glutty Kind** The world represents that  $P$ , and also represents that  $\neg P$ .

**The Gappy Kind** The world neither represents that  $P$ , nor represents that  $\neg P$ .

Mark's proposal allows for various possible sharpenings of "obvious consequence", each associated with a model structure. An individual determinately believes  $P$  iff the individual believes  $P$  according to all admissible model structures.

- Each model structure has a set of possible worlds, a set of *sufficiently consistent* impossible worlds, an accessibility relation among worlds for each agent, and a valuation function.
- An agent knows a proposition at world  $w$  (according to a model structure) if it's true at all (possible or impossible) worlds epistemically accessible (to the agent) from  $w$ .
- The models are arranged in a sequence (according to how seriously we take the twin norms of "not too many beliefs" and "not too few beliefs"). At each step, we throw out more impossible worlds for being too inconsistent, and we add impossible worlds that are more decisive than the worlds in the previous model.