Contents

1   Epistemology

Before me is a grassy green field. A line of trees marks its far edge, which is punctuated by a spruce on its left side and a maple on its right. Birds are singing. A warm breeze brings the smell of roses from a nearby trellis. I reach for a glass of iced tea, still cold to the touch and flavored by fresh mint. I am alert, the air is clear, the scene is quiet. My perceptions are quite distinct.

It seems altogether natural to believe these things given my experience, and I think I justifiedly believed them. I believed them, not in the way I would if I accepted the result of wishful thinking or of merely guessing, but with justification.

- beliefs from perception like this justified, not through some process of justification but inherent in the fact that they're just considered that way.

Being justified in believing something is having justification for believing it. This, in turn, is roughly a matter of having ground for believing it... **Our justification for believing is basic raw material for actual justified belief; and justified belief is commonly good raw material for knowledge.**

Belief justification occurs when there is a certain kind of connection between what yields situational justification and the justified belief that benefits from it. Belief justification occurs when a belief is grounded in, and thus in a way supported by (or based on), something that gives one situational justification for that belief, such as seeing a field of green. Seeing is of course perceiving; and perceiving is a basic source of knowledge—perhaps our most elemental source, at least in childhood. This is largely why perception is so large a topic in epistemology

2   Decision Theory

https://plato.stanford.edu/entries/decision-theory/

- As Sean Carroll stated, mathematics is just determining the underlying structure between sets.

- The underlying structure for a set of prospects (options) is the preference relation.

- Defining this preference relation is key to decision theory.

- As noted above, preference concerns the comparison of options; it is a relation between options. For a domain of options we speak of an agent's preference ordering, this being the ordering of options that is generated by the agent's preference between any two options in that domain.

- Preference and preference ordering being two distinct things.

- You need completeness and transitivity to do an ordering.

- "Consider first an ordering over three regular options, e.g., the three holiday destinations Amsterdam, Bangkok and Cardiff, denoted A,B and C respectively. Suppose your preference ordering is A B C . This information suffices to ordinally represent your judgement; recall that any assignment of utilities is then acceptable as long as C gets a higher value than B which gets a higher value than A . **But perhaps we want to know more than can be inferred from such a utility function—we want to know how much C is preferred over B** , compared to how much B is preferred over A .

For instance, it may be that Bangkok is considered almost as desirable as Cardiff, but Amsterdam is a long way behind Bangkok, relatively speaking. Or else perhaps Bangkok is only marginally better than Amsterdam, compared to the extent to which Cardiff is better than Bangkok. **This kind of information about the relative distance between options, in terms of strength of preference or desirability, is precisely what is given by an interval-valued utility function.** The problem is how to ascertain this information."