

Measuring Modality - Holly Andersen

Abstract:

One of the major criticisms of pragmatism concerns its ability to deal consistently with issues of necessity and possibility. Advances in areas like causation have bypassed some of these issues using interventions and system-relativity of causal claims; possibility then involves evaluating the different values that variables could take, placing it more firmly on territory involving confirmation via actual measurements to determine these values and their ranges. But this has in many ways punted on the question of how to treat modality, rather than answering it. This leaves the new revival of pragmatist work with the unresolved question of how to deal with the question of modality. This talk will illustrate a pragmatist approach to modality by proposing a new species of necessity, then showing how difficult it is to ascertain if it is 'really' real. I characterize a distinctive gradation of necessity, Lebesgue necessity. It is weaker than any other necessity, especially nomological necessity, yet it behaves in ways that are stronger than mere high probability. The relationship(s) between mathematical models and confirmatory physical measurements for those models may render it extremely difficult to identify actual examples of this species of necessity, for two reasons. One reason points in favour of only ever finding nomological necessity when measuring a system that might exhibit genuine Lebesgue necessity, such as never observing anti-thermodynamic behavior in energetically isolated systems. A second reason, involving the indefinite finitude of significant digits for any possible measurement of a potential Lebesgue necessity-exhibiting system, points in favour of only ever finding high probability outcomes using measurements. I draw on work by Bennett and Miller (forthcoming) to show how this situation - is there actually such a thing as Lebesgue necessity? - is an instance of a more general and unexpectedly metaphysical commitment in using continuously valued variables. Considerations of measurement excavate these metaphysical commitments regarding modality especially and show how a pragmatism can use holism and measurement to give a substantive pragmatist account of modality.