About || Browse || Search || Register || Registered Users Area || Help

# Justifying conditionalisation: Conditionalisation maximizes expected epistemic utility

Greaves, Hilary and Wallace, David (2006) Justifying conditionalisation: Conditionalisation maximizes expected epistemic utility.

*This is the latest version of this eprint.*

Full text available as:
PDF - Requires a viewer, such as Adobe Acrobat Reader or other PDF viewer.

## Abstract

According to Bayesian epistemology, the epistemically rational agent updates her beliefs by conditionalisation: that is, her posterior subjective probability after taking account of evidence X, p', is to be set equal to her prior conditional probability p(.|X). Bayesians can be challenged to provide a justification for their claim that conditionalisation is recommended by rationality --- whence the normative force of the injunction to conditionalise?

There are several existing justifications for conditionalisation, but none directly addresses the idea that conditionalisation will be epistemically rational if and only if it can reasonably be expected to lead to epistemically good outcomes. We apply the approach of cognitive decision theory to provide a justification for conditionalisation using precisely that idea. We assign epistemic utility functions to epistemically rational agents; an agent's epistemic utility is to depend both upon the actual state of the world and on the agent's credence distribution over possible states. We prove that, under independently motivated conditions, conditionalisation is the unique updating rule that maximizes expected epistemic utility.

| | |
|---|---|
| **Keywords:** | Epistemic rationality; conditionalization; bayesianism; cognitive decision theory |
| **Subjects:** | General Issues: Decision Theory<br>General Issues: Confirmation/Induction |
| **ID Code:** | 2713 |
| **Deposited By:** | Greaves, Hilary |
| **Deposited On:** | 21 April 2006 |
| **Additional Information:** | Minor changes from previous version in response to referee comments; diagrams added. |

## Available Versions of this Item

- Justifying conditionalization: Conditionalization maximizes expected epistemic utility (deposited 01 March 2005)
  - Justifying conditionalisation: Conditionalisation maximizes expected epistemic utility (deposited 21 April 2006) **[Currently Displayed]**

Send feedback to: philsci-archive@library.pitt.edu