

Theory and Experiments Seminar

Dynamic Belief Elicitation

Christopher Chambers
Georgetown University

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Abstract

At an initial time, an individual forms a belief about a future random outcome. As time passes, the individual may obtain, privately or subjectively, further information, until the outcome is eventually revealed. How can a protocol be devised that induces the individual, as a strict best response, to reveal at the outset his prior assessment of both the final outcome and the information flows he anticipates and, subsequently, what information he privately receives? The protocol can provide the individual with payoffs that depend only on the outcome realization and his reports. We develop a general framework to design such protocols, and apply it to construct simple elicitation mechanisms for common dynamic environments. The framework is robust: we show that strategyproof protocols exist for any number of periods and large outcome sets. For these more general settings, we build a family of strategyproof protocols based on a hierarchy of choice menus, and show that any strategyproof protocol can be approximated by a protocol of this family.

Keywords: Elicitation device; Scoring rule; BDM mechanism; Dynamic information; Second-order beliefs; High-order beliefs.