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Presentation Title
Rationalizable Incentives: Interim Implementation of Sets in Rationalizable Strategies
(with Takashi Kunimoto and Rene Saran)

Abstract
This paper investigates rationalizable implementation of multi-valued social choice rules or social choice sets (SCSs) in incomplete information environments. In addition, we clarify the conditions relevant for implementability of social choice functions (SCFs), with respect to those in Bergemann and Morris (2008) and Oury and Tercieux (2012). We identify rationalizable incentive compatibility (RIC) as the key condition for implementability, argue by means of example that RIC is strictly weaker than the standard Bayesian incentive compatibility (BIC), and show that RIC reduces to BIC when we only consider single-valued SCSs (i.e., SCFs). We next identify additional necessary conditions, chief among them uniform Bayesian monotonicity (UBM). UBM is weaker than the Bayesian monotonicity (BM) condition relevant for implementation in Bayesian equilibrium, and UBM reduces to BM for the case of SCFs. Essentially closing the gap between necessity and sufficiency, we seek to obtain a sufficiency result for rationalizable implementation in general environments. This result uses RIC, UBM, and several additional weak conditions. We also characterize a well-studied class of economic environments in which RIC is essentially the only condition needed for rationalizable implementation. In our clarification effort for the implementability of SCFs, we show that interim rationalizable monotonicity, found in the literature, is not necessary for rationalizable implementation, as had been previously claimed. Our results suggest a more flexible incentive theory based on rationalizable incentives, as opposed to insisting on the rational-expectations assumption built in equilibrium logic.

Keywords
Rationalizable incentive compatibility, Bayesian incentive compatibility, uniform Bayesian monotonicity, interim rationalizable monotonicity, implementation, rationalizability.

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