Cooperative extensions of the Bayesian game

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Abstract. The first part of this paper provides conceptual discussions of key ingredients. The basic one-shot model of Bayesian society is presented first; it synthesizes Harsanyi's (1967/68) Bayesian game and Aumann and Peleg's (1960) non-side-payment game (NTU game). Jackson's (1991) observation of the equivalence of the two widely adopted formulations of incomplete information is briefly reviewed. Two required meaningful conditions on an endogenously determined strategy are discussed: (1) Radner's (1968) measurability condition with respect to an information structure, and (2) d'Aspremont and Gérard-Varet's (1979) Bayesian incentive compatibility. Two descriptive *interim* solution concepts, the Bayesian incentive-compatible coarse core and the Bayesian incentive-compatible *interim* core, are discussed. The second part presents some results on the two *interim* solutions for the Bayesian pure exchange economy (a specific instance of the Bayesian society) in the private information case. The Bayesian incentive-compatible coarse core is nonempty. The Bayesian incentive-compatible *interim* core may be empty, as pointed out by Hahn and Yannelis (1997). Sufficient conditions for its nonemptiness are explicitly formulated. It is unlikely that these two positive results are extended to the general framework of Bayesian society. The materials here are taken from Ichiishi and Yamazaki (forthcoming).