EXTENSIVE GAMES AND COMMON KNOWLEDGE

Philip J. Reny
Department of Economics
The University of Western Ontario
London, Ontario   N6A 5C2

ABSTRACT

The usual justification for Nash equilibrium behavior involves (at least implicitly) the assumption that it is common knowledge among the players both that the Nash equilibrium in question will be played by all and that all players are expected utility maximizers. We show that in a large class of extensive form games, the assumption that rationality is common knowledge cannot be maintained throughout the game. It is shown that this can have serious consequences on traditional extensive form solution concepts (such as Selten's (1965) notion of subgame-perfect Nash equilibria).