

Game Theory and its Applications

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Abstract

“Interactive Decision Theory” would perhaps be a more descriptive name for the discipline usually called Game Theory. Game Theory is the logical analysis of situations of conflict and cooperation. The disciplines most involved in game theory are mathematics, economics, political science and other social and behavioral sciences and most recently computer science. There are also important connections with accounting and statistics. It is a sort of umbrella or “unified field” theory for the rational side of social science, where “social” is interpreted broadly, to include human as well as non-human players (computers, animals, plants).

Game Theory is the part of economic theory that focuses not merely on the strategic behavior of individuals in economic environments, but also on other issues that will be critical in the design of economic institutions, such as how information is distributed, the influence of players’ expectations and beliefs and the tension between equilibrium and efficiency. However game theory addresses the serious interactions using the metaphor of a game: in these serious interactions, as in games, the individual's choice is essentially a choice of a strategy, and the outcome of the interaction depends on the strategies chosen by each of the participants. On this interpretation, a study of games may indeed tell us something about serious interactions. However, at least three serious obstacles such as the complexity of the any real world game, the doubtfulness of rationality, and lack of unique prescription preclude the development of any unified prescriptive theory. This paper is devoted to the study of Game Theory and its applications in different disciplines in Social Science.