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A Critical Examination of Game Theory as Applied to Conflict and Negotiation

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MANY scholars and politicians have suggested negotiation as a solution for South Africa's problems. Although the subject of negotiation has been eclectic in the absorption of insights from other disciplines, it is only fairly recently that communicologists have become interested in the topic. Today there are various theoretical approaches underlying the study of negotiation. The Theory of Games (or Game Theory) is one of the earlier approaches — one however which is still popular in some quarters.

This article overviews the literature on Game Theory as applied to conflict and negotiation, and the writer concludes that though useful initially, it is no longer suitable for the study of real-life conflict and negotiation situations. The communicologist will have to find a less behaviouristic approach if he hopes to understand (and apply) the complexities of negotiation. Only then can we begin to talk of solutions.

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The Theory of Games is a branch of mathematics that aims to analyze various problems of conflict by abstracting common strategic features for study in theoretical models, according to the Encyclopaedia Britannica. It is termed 'games' because it is patterned on actual games such as bridge and poker. The idea was broached in 1921 by Borel, established in 1928 by Von Neumann who with Morgenstern developed a means of dealing with competitive economic behaviour in 1944. Watzlawick et al.(1967:285) says it is a mathematical tool for the analysis of man's social relations. It appears that though this approach initially analyzed decision-making strategies, sequences and rules in economic behaviour, it has now been extended to many sorts of interpersonal behaviour, including negotiation. According to Tedeschi and Rosenfell (1980:229) Games Theory as applied to negotiation is a mathematical formulation of

the bargaining process and examines the structure of payoffs that can occur to the two parties (i.e. the bargaining range and the utility schedule) as well as the relationship of various strategies to the payoff structure. Nieuwmeijer (1983:147) says that Game Theory uses a model or a matrix to predict the results of negotiation.

There is certainly no lack of research emanating from this approach to negotiation, and the matrices used range from simple to complex. Schelling's (1960) study is often regarded as the beginning of the modern interest in negotiation. Schelling explores strategies appropriate to winning. Frankel (1973:50) says that however pessimistic or optimistic we may feel about the possibilities of conflict resolution it behoves us to seek the most appropriate intellectual tools for analysing them — evidently Rapoport's (1960) classification of a conflict situation as a fight, game or debate has become popular. The classification is based on the behaviour of the participants. According to Rapoport (1960, 1974) in 'fight' behaviour the opponent is a nuisance and must be cut down to size. In 'game' behaviour you also want to win but must play according to the rules. Without an opponent there is no game, so unlike 'fight' behaviour the other must not be destroyed. Essentially you must treat the other with the same bssic considerations you expect yourself. Even in 'zero sum games' where the outcome is fixed and the share of one must be gained from the other, a game sometimes allows a 'saddle-point' which allows the smallest possible loss to both. In more complex 'non-zero-sum-games' co-operative play improves the final outcome so that both are better off. In 'debate' behaviour reason, consensus, negotiation and persuasion are common. It is significant that the latter characteristics are not slotted under 'game behaviour' — but more about that in the general evaluation of the approach a little later.

According to Littlejohn (1978:245) Game Theory includes several different kinds of games but in all games the rational decision-making process is stressed. ''The key question is how players behave in order to gain rewards or goals. Types of games vary in a number of respects, including the amount of information provided to players, the amount of communication permitted between players, and the extent of co-operative versus competitive incentive built into the payoff matrix.''

The most simple game simulations are variations of the Prisoner's Dilemma Game — commonly known as PDG, or simply PD. Rubin and Brown summarise this research (1975). The prisoner's dilemma however is basically a reward structure commonly presented in a 2 X 2 matrix. Players are either rewarded or punished and play either simultaneously or by turn. The 'research' then correlates the choices of the two prisoners numerically. Littlejohn (1978:246) in his discussion of the PDG says it is a mixed-motive game since the players may choose between co-operating or competing, and there are geniune reasons for doing either — however most research indicates that over several trials the vast majority of players move ultimately toward the nonco-operative strategy.

Steinfatt and Miller (1974) analyse the process of communication in conflict as reviewed in Games Theory literature. They point out (pp 14ff) three ways in which parties in conflict evaluate each other's strategies: firstly — observing the other's moves over several trials of the game; secondly — observing the total situation of conflict and anticipating the other's moves; thirdly — direct communication. If the two parties communicate directly (i.e. negotiate) they move away from a win/lose solution towards one that maximizes the rewards for both. In a PDG for example, both prisoners would receive lesser sentences. Steinfatt and Miller (pp 32-33) go on to develop a three-point-model of communication in conflict. The communication is firstly symbolic because the stated intention does not carry the consequence of the real move — i.e. a real move with 'payoff' consequences is distinguished from symbolic moves. Secondly communication improves co-operation and may even change the probability of moves. Thirdly, communication may result in non-situational consequences — i.e. com-

munication changes the behaviour of the person in the situation.

The literature on negotiation abounds with experiments using Games Theory as a theoretical basis. One needs theoretical tools by way of terminology, paradigm etc. and Games Theory provided this initially in the study of negotiation and conflict. Some of the studies have even stressed the importance of communication: the more communication, and the more open the channels, the greater the co-operation and the maximizing of rewards. The main concern of Games Theory is a search for solutions and it is basically a deductive method concentrating on the logic of a situation rather than an empirical study of a process. By stressing aspects controlled by the participants it goes beyond classical probability theory in which outcomes are left to chance. For a quantitatively-inclined social scientist it has the advantages of a conceptual framework that can be easily adapted, relatively few semantic problems, the 'best' results can be specified and it is empirically testable. Games Theory provided a conceptual framework for research on simple situations and problems — no wonder it was accepted and the excitement generated research.

Not that the theorists necessarily claim otherwise but the main problem with Game Theory is that the real situation is far more complex than a game situation. Life cannot be compared to a bridge or a poker game! In a game somebody wins — but in successful negotiation both must feel they have gained something. A game has a given set of rules and a known set of values. In negotiation the values are often unknown and even an agreed set of rules cannot anticipate or control all the variables in real-life negotiation.

Nierenberg (1973:20) points out too that in a game each player is limited in his moves — i.e. what he can and cannot do; and further in a game even the element of chance is governed by rules. Nierenberg rightly observes (p 24) that unlike a game, there is no end to a life negotiation situation. This is particularly relevant to the South African situation where we will have to live with the outcome of our decisions, and our children after us. A game cannot contain the seeds of its own destruction — it is only a game after all. Tedeschi and Rosenfell (1980:229) claim that Games Theory makes predictions about the nature of the agreement that should be reached by parties given the structure of the situation, i.e. presuming participants to be totally rational decision-makers. They rightly point out however that this is not what 'real' people do. In listing the limitations of this approach Nieuwmeijer (1983:136) also mentions the acceptance of the negotiator's rationality, also the reliability of predictability is questionable, gain values for each choice are not always known, it doesn't lend itself to repetitive negotiation or the process of dynamics, and it is unsuitable for multi-party negotiation which may be required in South Africa, i.e. Game Theory is more suitable when there are only two parties involved, according to Nieuwmeijer. This last point is debatable although most scholars agree that the multi-ethnic nature of South Africans does compound the problem. As a solution however, multi-party negotiation may further complicate an already compex situation. Isn't the *basic* South African problem a black/white problem which may possibly be solved in black/white negotiation? The blacks have the power of sheer numbers and the whites hold the power. Negotiation with other minorities could mark a further phase of negotiation.

Game Theory does not explain the process of communication in conflict situations — it merely notes it. Game Theory presents conflict situations to people in order to observe their reactions. In real life, conflict is not *presented* to people — it develops from a real life situation as perceived subjectively by people with conflicting interests, needs etc. Pruitt (1981:2) points out that game theorists ordinarily assume that the parties make independent decisions, often choosing between the options without knowledge of the other's choices and vice versa — yet the whole point of negotiation is that decisions should be jointly arrived at. How does an outside observer infer motivation from behaviour? How does one distinguish strategy from underlying motive? There are still too many doubts, too many unanswered

questions with this experimental method.

In a nut-shell then, Game Theory is over-simplistic, deterministic and behaviouristic. In real-life negotiation is a complex process affected by many interacting variables. Man is not a mere puppet-on-a-string responding mechanistically to the other participant of negotiation. (One experimental 'game' has the two participants coupled to a shock apparatus and they 'soon learn' which button brings rewards or shocks). Game Theory does not allow for the fact that man is also a cognitive and moral being, and an unpredictable one at that.

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