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Journal of Economic Literature review of *Economic Games and Strategic Behavior*, by Frank Stahler, Cheltanham: Edward Elgar Publishing, 1998.

Body plus references: 802 words.

This book is about self-enforcing agreements between two people in the context of infinitely repeated interactions and complete information. The well-known "Folk Theorem" of game theory says that there exists an infinite number of subgame perfect equilibria in such games, so for analysis to be interesting it must add extra structure. This extra structure can be supplied by changing the game, making the number of repetitions finite or information incomplete, or by changing the equilibrium concept, excluding some of the subgame perfect equilibria as being implausible.

Frank Stahler's approach is to refine the equilibrium concept. Since he is interested in games in which the two players can talk and make an explicit agreement, he requires that their agreement be a "weakly renegotiation-proof" equilibrium, meaning, as he puts it on page 27 that "none of its continuation payoffs is Pareto dominated by another continuation payoff." The effect of this is to rule out agreements that use the "grim strategy," of complete noncooperation forever after if one player deviates from the agreed-upon behavior; the players cannot agree to give up future gains from trade as a punishment for opportunism. It allows agreements in which a deviating player is punished by being required to return to good behavior for a certain number of periods during which the other player need not reciprocate, after which normal trade benefitting both sides will resume.

The aims of this book are nicely laid out at the start: to answer a series of questions on page 4 with which any reader should begin, questions ranging from "What role do contracts play in a non-cooperative environment in which the economic game does not guarantee compliance?" and "Which self-enforcing contract will be chosen?" to "Might a party prefer a self-enforcing contract even if enforceable contracts were possible?" It will be apparent that the word "contract" is used here as a synonym for "agreement," just as it is by many economists but contrary to the more

precise usage in law, where many an exam question consists of "Is this agreement a contract?"-- that is, "Is this agreement be enforceable in court?" Using the word in the legal sense, this book is about situations where agreements are possible, but contracts are not.

The questions to be answered are good, but they become less interesting the more the context is narrowed. Without courts, what use are agreements? A number of things come to mind. Agreements make the expectations of each party clear, permitting better coordination and avoiding future disputes. They allow a wronged party to credibly disparage the wronging party's reputation. They bind the parties morally, so that a principled party will keep the agreement even if no court binds him. At the same time, explicit agreements do have costs: the transactions cost of clarifying what each party is to do, and costs arising from incorrect enforcement.

Most of these points are hard to address in a context of infinitely repeated games of complete information with no uncertainty and no transaction costs. Transaction costs can be studied in such games, by preceding them with negotiation games which explicitly model the process by which the agreement is reached. The "cheap talk" literature (e.g., Farrell [1987]) does this, and it would have been a nice way to put renegotiation-proofness into the structure of the game instead of in the equilibrium concept-- to introduce it structurally rather than as reduced-form. Lacking that, the focus is on coordination of expectations, the agreement simply making clear what each party is to do and what happens if one of them deviates. The analysis comes down to the study of renegotiation-proof punishment paths and the effects they have on the division of the gains from trade.

Renegotiation-proof punishment paths are interesting in themselves, however, and perhaps the most interesting conclusion of the book is its answer to the question, "Might a party prefer a self-enforcing contract even if enforceable contracts were possible?" The transaction costs of enforceable contracts and the possibility of court error are obvious reasons, but not the only ones. In addition, a party with weak bargaining power might prefer that enforceable contracts be impossible because in the absence of court enforcement the two parties must make the agreement beneficial enough to each of them to prevent later deviation as well as initial consent. The stronger party cannot take too much surplus away from the weaker party, or the weaker party will have too little incentive to adhere to the

agreement. Thus, we arrive at the surprising conclusion that the unbiased rule of law can sometimes hurt the weak and benefit the strong. That is a notion we may hope Dr. Stahler pursues in his future work.

Farrell, Joseph (1987) ``Cheap Talk, Coordination, and Entry,'' *RAND Journal of Economics*, 18: 34-39 (Spring 1987).