Abstract: It is postulated that descriptive bargaining theories should have semi-normative properties. They concern the influence of tactical variables, the first demand or the conflict threat, on the agreement. A computer simulation shows that the dynamic aspiration balance theory has some semi-normative properties such as the convexity of the payoff profile over the aggressivity of the first demand. This profile is shifted and modified by aggressive threats. Properties of other bargaining theories are discussed.

I. Introduction

Microeconomic theories can be seen as an image of real individual decision behavior. One can distinguish between descriptive theories and prescriptive or normative theories. Whereas a descriptive theory tells what people do and how they behave, normative theories say how people should behave in order to maximize their goal or utility function.

The quality of descriptive theories normally is judged by their explanatory properties, i.e., by their numerical closeness to reality. In addition, one can postulate a structural closeness to reality (cf. TIETZ 1973, p.56f.), on which the degree of differentiation or the fineness of the picture depends. This means that a microeconomic theory should give not only the solution but also an image of the real decision process.

Normative theories may differ with regard to their structural closeness to reality. They can be tested for their numerical closeness to reality after a transformation into a descriptive theory. This transformation should include at least a specification of the decision maker's utility function and the assumption that people behave in a rational way. Empirical research, and especially experimental economics, is thus used to judge the quality of theories. The test of single hypotheses derived from a theory is an important step in the judgement of theories. If reality coincides with the hypothetical effect, one has to examine in addition whether similar hypotheses cannot be derived from competing theories. Only if a hypothesis does not
hold in reality, one can conclude that the normative theory within its descriptive specification is not valid. This is one direction of testing theories.

The theme of our conference, "Modeling Bounded Rational Behavior in Experimental Games and Markets" calls for an additional test going in the opposite direction. By means of the explorative method we develop models which should describe the decision behavior in the experimental situation as closely as possible. The additional test should answer the question whether the descriptive theory also has at least "semi-normative" properties.

Assuming that subjects follow the rules of a theory one can derive from the theory also recommendations, e.g., in which direction tactical variables have to be changed to improve outcomes. If the subjects follow these recommendations, the theory should still be valid and the resulting situation should remain in the neighborhood of the observed situation. The recommendations should not lead to a reciprocal escalation of aggressive behavior ending in a severe conflict. Otherwise, either the observed behavior of the subjects was not even limited-rational or the theory has insufficiently consistent semi-normative properties.

The test proceeds as follows: Strategic variables are varied in a computer simulation of the model. Then, the strategy which leads to the highest outcome under given conditions can be selected. In a multilateral decision situation, these "best reply-strategies" have to be computed for each strategy combination of the other players. Vectors of strategies in which each player plays his best reply are equilibrium points in the game-theoretic sense. The positions of the equilibrium points or of the best replies to the situation observed empirically and the profile of the intersecting curve of partial strategy variation give insights into the strategic properties of the theory under semi-normative aspects. In addition, one can ask to which extent the behavior prescribed by the theory coincides with observed strategic behavior.

Regarding a theory of bilateral bargaining, the computer simulation determines the payoff of agreements – and disagreements – for different constellations of tactical variables. Such tactical variables are, e.g., the first demands, the offers with which both parties open the negotiation. Since, in reality agreements are more important