Intern. J. of Research in Marketing 18 (2001) 5–17

International Journal of Research in Marketing

www.elsevier.com/locate/ijresmar

The impact of altruism and envy on competitive behavior and satisfaction

Donald R. Lehmann *

Columbia University, Graduate School of Business, Uris Hall, 3022 Broadway, Room 507, New York, NY 10027-6902, USA

Abstract

This paper argues that it is important to include the other party's payoff in a competitor's utility (satisfaction) function. Examples of the impact are provided as well as implications for multi-stage games (competitions). A sample of 200 provides empirical support for the critical role other party results play in satisfaction, in particular the importance of relative payoffs. Several implications emerge, including a parsimonious explanation for the exponential pattern of shares in mature markets.

Keywords: Envy; Altruism; Competitor; Satistfaction

1. Introduction

The mere mention of the word competition brings to mind battles where one person's gain can only come at the expense of the other's. Of course, zero-sum thinking is not a requirement, as phrases like coopetition suggest. Still, the primary model of bargaining is of zero-sum games. Further, parties are typically assumed to place no weight on the outcome the other party receives except for (a) that necessary to keep the party in the current or future negotiations or (b) some (usually minimal) concern about fairness. Yet there are a number of reasons why a party might positively (e.g., friendship, charity) or negatively (e.g., war) value outcomes received by other parties. In this paper we refer to positively valuing the other's payoff as altruism and negatively valuing it as envy. While we provide some evidence as to their existence, the main purpose of this paper is to explore the impacts of altruism and envy on bargaining outcomes.

Work exploring the impact of others' welfare on own preferences has begun to appear in many fields including marketing (Corfman and Lehmann, 1993) and economics (Rabin, 1991; Levine, 1996). Essentially, these approaches expand the valuation function to include both own and other's payoffs.

In this paper, we explicitly include other parties' payoffs in a party's own value function, expanding on Assunção and Lehmann (1992). We then examine the impact of doing so for particular functions. The focus here is on the consequences of this type of utility function; we leave process issues and the comparison of different models of this type to future work. We demonstrate how relatively small amounts of altruism or envy can substantially affect the outcomes. One interesting consequence is that, under certain conditions, the model suggests side agree-

* Tel.: +1-212-854-3465.
E-mail address: drl2@columbia.edu (D.R. Lehmann).

0167-8116/01/$ - see front matter
PII: S0167-8116(01)00026-X

ments may develop where one party freely gives the other payoffs not contained in the original scope of the negotiations. Another implication of a simple extension of the model is an explanation for the distribution of shares according to Zipf's Law.

2. Background

Concern about other parties' results (happiness) has been the subject of numerous articles. For example, equity theory (cf. Messick and Cooke, 1983) suggests that, at least in some cultures, a standard exists for dividing things up other than "winner take all". The same concept shows up in the literature on distributive justice (cf. Land and Tyler, 1988). The basic point of this paper is that parties may prefer results which divide up resources so that the other party benefits (altruism) or, alternatively, situations where the other party is damaged (envy), even if they are worse off themselves in terms of payoff.

More specifically, the notions of altruism and envy present an interesting perspective on individual satisfaction with outcomes in multi-person games (i.e., competition). Altruism has a long history in bargaining studies (cf. Deutsch and Kotik, 1978) and the concept of fairness has been related to preference (Messick and Sentis, 1979; Kahneman et al., 1986). Recently these concepts have begun to be applied to game theory (Rabin, 1991; Levine, 1996; Bolton, 1999; Güth, 1999). In this paper we extend this work by examining the implications to the parties of different satisfaction functions. Unlike some other papers (e.g., Fishburn and Sarin, 1997), however, we do not focus on social welfare as a whole.

A major issue involves whether utility (and by extension satisfaction) are cardinal and comparable across individuals. While the cardinality assumption implicit in this paper has a long tradition (e.g., Keeney and Kirkwood, 1975), objections can be raised on theoretical grounds. In addition, measurement issues related to differences in the use of a scale (i.e., some people tend to spread answers—sometimes called extremism—and others cluster around the midpoint) can confound true differences in utility (satisfaction). Still, this paper makes the assumption that a cardinal satisfaction function exists for each party.

Some argue that no one should consciously place value on other parties' outcomes beyond that which is necessary to keep the other party in the game and hence to obtain current and future personal benefits. There is no doubt such conscious strategic behavior exists; phrases like "leaving them a carrot" represent exactly such behavior. However, it is just as plausible that such behavior is unconscious, in effect, programmed into DNA molecules through generations of evolution when cooperation meant survival. Evolutionary biologists have identified altruism in many species (Tangley, 1999). Further, the teachings of multiple religions and cultures encourage a conscious consideration of others, taking joy in others' happiness and welfare. In any event, the purpose of this paper is not to prove the existence of altruism or to establish its source. Rather, we demonstrate some of its consequences, assuming it exists.

3. Satisfaction with outcomes

A number of different models of utility for own and opponents' solutions have been tested (Corfman and Lehmann, 1993; Lowenstein et al., 1989). Here we focus initially on a simple linear model of satisfaction of this type:

$$\mathrm{Sat}_A = W_{AA} P_A + W_{AB} P_B \tag{1}$$

where P_A, P_B = payoffs to A, B and W_{AA}, W_{AB} = weight placed by A on payoffs to A, B.

Of course, more complex models exist. Corfman and Lehmann (1993) presented and estimated four different models based on different combinations of own and other's payoffs:

Model A:

$$\mathrm{Sat}_A = \alpha + W_{A1} P_A + W_{A2} P_A^2 + W_{d1}|P_A - P_B|Z_1 + W_{d2}|P_A - P_B|^2 Z_1 + W_{d3}|P_A - P_B|Z_2 + W_{d4}|P_A - P_B|^2 Z_2; \tag{2}$$

Model B:

$$\mathrm{Sat}_A = \alpha + W_{A1} P_A + W_{A2} P_A^2 + W_{B1} P_B Z_1 + W_{B2} P_B^2 Z_1 + W_{B3} P_B Z_2 + W_{B4} P_B^2 Z_2 + \epsilon; \tag{3}$$