Negotiation Fever:

Loss Aversion in Multi-Issue Negotiations

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Abstract

Negotiating parties oftentimes do not reach mutually beneficial agreements. A considerable body of research on negotiation analysis compiled a set of so called *common biases in negotiations* that systematically affect the cognition and behavior of negotiators and thereby influence agreements (e.g. Bazerman and Neale 1992; Bazerman et al. 2000). The present work adds an additional effect, the *attachment effect*. This effect biases decision makers in bilateral multi-issue negotiations and influences their preferences via reference points—negotiators get caught in a kind of *negotiation fever*.

Keywords: Negotiation Analysis, Consumer Preferences, Behavioral Economics, Experimental Economics, Endowment Effect, Loss Aversion

Introduction

During the Seminar on *Negotiation and Market Engineering* held in November 2006 in Dagstuhl, Germany, several of the participants expressed the following views on preferences and rationality:

- 'Game theorists think a lot of things do not matter. Most of the time they are wrong.'
- 'I prefer auctions in computing systems—there is at least some type of rationality.'
- 'ZIP, truth telling and so on are simple and elegant strategies which traders use.'
- 'There is a range of prices for which I just don't care. I'm in the zone of indifference.'
- 'Utility maximization is not what I believe in.'

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These statements might not be surprising for someone who thinks about decision-making in everyday life but they are in contrast to traditional economic modelling of decision making based on utility maximization. The expression of these viewpoints at the seminar is one indicator for the fact that there is more to understanding negotiations and markets than pure, traditional, micro-economic modeling.[1]

In this vein, the present paper investigates bilateral multi-issue negotiations from different perspectives: micro-economics, behavioral economics, and cognitive psychology. In the terminology of (automated) negotiation (e.g. Jennings et al. 2001), the work deals with the 'agent decision making model'; in the terminology of market engineering (e.g. Weinhardt and Gimpel 2006) it is concerned with the 'agent behavior' which relates the market structure to the market outcome.

Recent papers advance the understanding of auction fever, i.e. bidders that seem to get caught by the dynamics of an auction and outbid their initial upper limit (e.g. Heyman, Orhun, and Ariely 2004; Ku, Malhotra, and Murnighan 2005). If a bidder had the highest bid for a long time, for example, she might feel attached to the good and perceive a loss when being outbid. Correspondingly, the proposed attachment effect in negotiations results in a kind of negotiation fever: negotiators become attached to specific outcomes on single issues in the course of a multi-issue negotiation and might perceive a loss when the counterparty proposes a trade-off that would have been mutually beneficial prior to negotiating.

Theory

The implications of reference points have been studied extensively over the last decades (Kahneman and Tversky 1979; Tversky and Kahneman 1991, 1992; Kahneman 1992). The origin of reference points, on the other hand, is a grossly understudied topic and oftentimes the status quo is taken as best estimate for a reference point. The present work studies the emergence and development of reference points in the context of bilateral multi-issue negotiations. Understanding decision making in negotiations is thereby approached from a behavioral and an economic view point: The attachment effect model assumes a causal relationship of

1. offers made by the negotiators,
2. their expectations in the outcome,
3. issue-wise reference points,
4. preferences, and, finally
5. choice.

[1]The reader should not mistake this as discredit of rational choice models etc.–they are without any doubt valuable tools in understanding and designing negotiations and markets. However, a wider toolbox is needed to fully grasp the complexity of negotiations and markets.

The traditional economic counter piece is a rational choice model that assumes preferences to be invariable and fix—even if they would base on a reference point, this reference point would be invariant to any negotiation or market process.

Besides the work by Kahnehman and Tversky which is cited above, the attachment effect model draws on the ideas of Köszegi and Rabin (2006) and is related to the game-theoretic equilibrium model by Compte and Jehiel (2006). Previous versions have been published before (Gimpel 2005a, b, 2006, 2007a). The most comprehensive related publication is Gimpel (2007b).

Empiricism

Two experiments are conducted to test applicability of the proposed attachment effect model. In an internet experiment (Gimpel 2007a), students negotiate on attributes of a contract and in a lab experiment they negotiate on elements of a product bundle. The experiments control the course of alternating offer multi-issue negotiations and use between-subject comparisons of preferences expressed ex-post. Data on subjects' subsequent choices, subjective ratings of satisfaction and complexity of choices, and response times favor the attachment effect model over the rational choice model. The effect of single offers on preferences can be quantified by a maximum-likelihood estimation of the attachment effect model.[2]

Conclusion

The attachment effect in negotiations is motivated theoretically and the experiments show clear evidence for a systematic bias: Offers in a negotiation influence the negotiators' preferences. In a negotiation analysis context (Raiffa 1982, 2003), the results can be used for prescriptive advice to negotiators: either for debiasing, i.e. for preventing to be affected by the 'irrational' nature of the effect, or to systematically affect the counterparty's attitude towards the object of negotiation. As a result, gains from trade can either be created or destroyed in bilateral interactions. Furthermore, the results can be utilized in engineering negotiation support systems.

[2]More detailed results will be published elsewhere.

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