Wharton Risk Center Russell Ackoff Doctoral Student Fellowship
2013 Application

Social Comparison in Contests

Jeff (Cexun) Cai
Doctoral Candidate
Wharton Marketing Department

Mailing Address:
Suite 700 Jon M. Huntsman Hall
3730 Walnut Street
Philadelphia, PA 19104
E-mail: caicexun@wharton.upenn.edu

Faculty Advisors:

Robert J. Meyer, Marketing Dept

Jagmohan S. Raju, Marketing Dept

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1 Goals of Research

Abstract: Outcomes of contests in marketing and economics depend on how agents think about the effects of social comparison when competing against one another. Drawing from the literature on social comparison, we propose a stylized theoretical model of two agents engaged in competition who care about—in addition to his or her absolute performance—relative performance with regards to the other agent. We will first examine the Nash equilibrium predictions from our theoretical model, and examine if they are in line with anecdotal evidence from the real world, or with empirical evidence from secondary data if available. In addition, we will run experiments in the behavioral lab to examine if our model is internally valid. Further theoretical work will examine the effects of asymmetry in social comparison, and whether relative comparisons can endogenously arise in the presence of uncertainty in performance and the need to signal for quality.

1.1 Modeling Social Preferences

To arrive at accurate predictions of behavioral outcomes, identifying critical variables that influence behavior is desirable. In recent years, the field of behavioral economics has sought to extend traditional economic models towards more plausible models which not only retain formality, but also predict behavior more accurately (Ho, Lim and Camerer 2006). For example, Fehr and Schmidt (1999) extend the conventional idea of utility to be a function of more than just absolute wealth – agents may also have inherent preferences for fairness or inequity aversion. If people indeed have such "nonstandard" or quasi-rational preferences, then empirical outcomes arising from such preferences should be widely observed not only in the experimental laboratory, but also in the field. Increasingly, there is good empirical evidence for the influence of quasi-rational preferences on behavior not only in domains like consumption and finance, but also in areas such as crime, voting, charitable giving and labor supply (DellaVigna 2009).

Recent work in this area has also examined ways in which social comparison (Festinger 1954) – potentially another form of quasi-rational preferences – not only influence behavior, but may also effectively resolve certain paradoxes in the literature. In economics, Clark, Fijters and Shields (2008) resolve the Easterlin paradox of substantial real income growth in developed countries without a corresponding increase in reported happiness by showing that this phenomenon is in fact consistent if we include relative income terms in the utility function. In marketing, researchers have applied social comparison to study certain problems. For example, Zhou and Soman (2003) show that consumers are more likely to stay in a line when the number of people behind them increases because they are in a "relatively more positive affective state" from downward comparisons to the people behind them. In the study of conspicuous consumption, Amaldoss and Jain (2005) incorporate social comparison into the utility function of consumers, and explore how it impacts pricing decisions for the firm.

1.2 Understanding the Effects of Social Preferences on Competition

Given the evidence for social preferences in the economics and marketing literature, a logical extension is to examine the effect of social comparison on behavior, assuming interdependency of agents' actions and payoffs. In other words, outcomes of competition may depend on the way in which social preferences of the agents interact with the forces of competition.

Our interest in this question extends vastly beyond theory. Firms in particular are interested in how social preferences affect the design of salesforce compensation: an expense that amounts to more than $800 billion for US firms each year, and is three times that of advertising expenditure (Steenburgh and Ahearne 2012).

Recent research reveals how firms are beginning to realize the effects of social pressure on a segment of its sales executives, and is therefore structuring its incentives to leverage the benefits of social pressure, while paying attention to its downsides. This could mean significant savings on salesforce compensation for firms, and is especially pertinent in times of slow economic growth. The need for more theory and empirics is clear, and marketing researchers are beginning to address the questions that firms are concerned about.

1.3 Approach and Implications of Our Research

The goal of our research is to build on the existing literature of social preferences in contests (e.g. Lim 2009) and examine specifically the effects of social comparison on competitive behavior — a factor which we believe can be critical in determining outcomes of competition. We will approach the research question using a blend of theory and empirics. First, we will build a stylized theoretical model of two agents engaged in competition who care about—in addition to his or her absolute performance—relative performance with regards to the other agent, and to compare the theoretical Nash equilibrium outcomes of such behavior with empirical evidence from secondary data. We will also run experiments in the behavioral lab to examine the internal validity of our model. We also intend to examine the effects of asymmetry in social comparison, and whether such behavior may endogenously arise in the presence of uncertainty in performance and the need to signal for quality.

One immediate managerial implication from our current work is in the design of incentive structures. For example, given evidence of social comparison among salespeople in contests, firms will have to think carefully about the right type of incentive structure and appropriate benchmarks to set for managers in order to elicit the behavior that the firm desires.

2 Planned Methodology

A combination of game theory and experimental economics will be used to address the proposed research question. We seek to approach the game-theoretic model from two perspectives. The first will be to exogenously incorporate a utility function for agents that contains a term for relative payoffs, which is meant to reflect the nature of social comparison. The second will be to examine if social comparison may endogenously arise from the structure of the game given uncertainty in performance and the need to signal for quality. In both cases, we will examine the behavior of agents, and the effects of asymmetry in social comparison.

After developing the theoretical propositions based on the model, we will then test the internal validity of our model by carrying out laboratory experiments at the Wharton Behavioral Lab. Our estimated sample size for the subject pool is around 250. If possible, we will also seek to run a field experiment, or obtain secondary data upon which we will test our theoretical propositions. We hope this stream of research will yield a set of interesting findings relevant to marketing, economics and strategy.

3 Request for Funding

I hope to utilize the support of the Ackoff Fellowship to build on the stream of research outlined above. The financial support that I am seeking will be used for two specific purposes for this research project. The first is to cover conference and travel fees for the annual major marketing conference (INFORMS Marketing Science Conference) to be held in Istanbul in July 2013, for which I have already signed up and submitted an abstract in order to present this stream of research.

The second is to cover the costs for data collection (net of what the behavioral lab will cover) for an incentivized experiment for an estimated number of 250 participants (for around six to eight treatments) in the behavioral lab, where bonus payments will be made out to subjects to ensure incentive compatibility of behavior, and to replicate actual incentives of payouts from contests in the real world. Any incurred expenses that the Ackoff Fellowship does not cover will be paid out-of-pocket or by remaining funds in my departmental research budget. The eventual goal is to publish this research in a journal.

I am especially grateful for the research support that the Wharton Risk and Decision Processes Center provides doctoral students through the Ackoff Doctoral Student Fellowship program. I thank you for your consideration and will be happy to address any questions on the above proposal.

Budgetary Allocation

Specifics of how Funds will be Used

I have provided a breakdown of the budget details in the subsection below. The funds will be used for two specific purposes: (1) to cover conference and travel fees for the annual major marketing conference (INFORMS Marketing Science Conference) to be held in Istanbul in July 2013 which I have signed up to present this stream of work, and owing to the international location, will be higher than the expenses for an average conference; and (2) to cover data collection in an incentivized experiment for about 250 participants.

Budget Details for Anticipated Expenses

- Registration Fee for Marketing Science 2013 Conference: $400
- Return airfare and other travel expenses (e.g. taxi) from Philadelphia to Istanbul: $1,400
- Hotel (3 nights): $500
- Data Collection for 250 participants at an average of $5 (estimated at 15-30% of costs which the behavioral lab will not cover): $1,250
- <u>TOTAL: $3,550</u>

Other Sources of Research and Travel Funding from Department

The Wharton Marketing Department allocates some funding for research and travel that is sufficient to cover but a minor percentage of the research and travel expenses that I intend to incur over the next year for this stream of research. As documented above, the bulk of the expenses will be for travel to the annual Marketing Science conference, which is held in an international location once every three years. Also, I declare that I have no other sources of funding to cover the above expenses.

Previous Funding from the Ackoff Fellowship Award

I declare that I have not received any funding from the Ackoff Fellowship award in previous years.

References

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