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Risky shifts as multi-sender signaling ☆

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Abstract

This paper addresses the issue of risky shifts by a multi-sender signaling game. Senders compete in making proposals to be adopted by a group, hence they try to signal that they have the ability to correctly observe the state. This paper shows that senders tend to avoid making a moderate proposal, because a moderate proposal signals incompetence. When facing a moderate and a risky proposal, the group tends to adopt the risky one, and we have risky shifts as a result.

JEL classification: D82

Keywords: Signaling game; Risky shifts

1. Introduction

This paper develops a multi-sender signaling game that describes a situation of group decision making, and provides a mechanism through which risky shifts, group-induced attitude changes toward risk-taking behavior, arise. Specifically, we consider a multi-sender signaling game in which two proposers for group decisions (the senders) compete to have their proposals adopted

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by a group (a receiver). The two senders have private information about their own competence, and a competent sender has further information that is useful for group decision-making. The winning sender obtains some "leadership rent." An example is a situation in which two political candidates are trying to signal their competence as well as the decision-relevant state of the world through their platform choices.[1]

Risky shifts and cautious shifts are opposing phenomenon generally referred to as choice shifts, which are widely viewed as robust phenomenon. Risky shifts refer to directions at which the group decision is influenced as a result of in-group interactions, while the term "group polarization" refers to attitude change on an individual level in the group.[2] The study of choice shifts is traced back to Stoner (1961), who observes risky shifts in a series of experiments. Leadership was one of the first explanations suggested for choice shifts. Wallach et al. (1962) and Rim (1965), through experiments, find that people higher in risk-taking are rated as having more influence on a group.

Recently, by focusing on the function of the aggregation of preferences in group decisions, Eliaz et al. (2006) derive choice shifts as a consequence of a violation of expected utility theory. Sobel (2014) and Roux and Sobel (2015), by focusing on the role of information aggregation in group decisions, present conditions under which individuals induce group polarization. This paper, by constructing a signaling model of group decision making, theoretically pursues the connection between leadership and risky shifts.

This paper demonstrates that risky shifts arise when people have risk averse preferences. The intuition is simple: A risky proposal is a gamble for incompetent proposers because it may distort the group decision and result in a disastrous consequence. This makes incompetent proposers reluctant to choose risky proposals, hence risky proposals have the implicit signal that they are coming from competent proposers. In an equilibrium, when a group faces both a moderate and a risky proposal, it chooses the risky one more often, which leads to risky shifts in our context.

On the theoretical side, this paper is one of multi-sender signaling games with imperfectly correlated sender types. This is because the incompetence of a sender does not imply incompetence of the other sender (thus their types are not perfectly correlated), and if both are competent, they must observe the same decision relevant state (thus their types are correlated). This model class is barely analyzed in the literature. The analysis can be cumbersome, because the way a sender computes his expected payoff depends on his type. Also, the belief of the receiver is a joint distribution over the senders' types, which has to be defined over all pairs of messages. By making a simple model where the receiver directly cares only about a single variable (decision-relevant state) but not about the intrinsic type of the senders (competency), this paper gives a tractable example of such a potentially complicated class of games.

This paper is tied into the literature in an electoral competition when candidates have the motive to signal their preferences or valences. This line of research started with Banks (1990), who develops a model of costly lying in elections, in which candidates' action preferences are private information. Typically, in the literature, senders are characterized by one of two types, which is private information: Candidates may be honest or dishonest in Callander and Wilkie (2007), candidates may have "character" in Kartik and McAfee (2007), senders may be either policy or

[1] Other examples are situations such as when an organization names a manager, political leaders nominate an economic adviser, a country chooses a coach for its national football team, or investors seek tips from a stockbroker or financial adviser.

[2] See Myers and Lamm (1976).