Research Interests

I am interested in researching the mechanisms of human interaction in the context of sequential decision-making under imperfect information. Examples of my research interest include herding, coalition formation, voting and many other group and collective behaviors. They are all related to information transmission and aggregation, which involve strategic interactions among agents.

Current Research

My job market paper, *Robust Herding with Endogenous Ordering and One-Sided Commitment*, analyzes a sequential decision model with one-sided commitment in which decision makers are allowed to choose the time of acting or waiting. The existing literature assumes an exogenous ordering of decision makers, in which only one decision maker moves at each period in an exogenously given order. If information previously aggregated dominates their own private information, individuals ignore their own private information and follow their predecessors – herding occurs. Consequently, their decisions are uninformative to others, which prevents information aggregation. Therefore, initial realization of signals can have long-term consequences and herd behavior is often error prone. My main question of inquiry is: if we allow decision makers to choose the time of acting or waiting, will herd behavior be more or less error prone? With endogenous ordering, there exist strategic interactions among decision makers due to information externalities. I characterize herd behavior under endogenous ordering and compare it with herd behavior under exogenous ordering. I then show that with endogenous ordering, if decision makers are patient enough, at any fixed time, nearly all decision makers wait due to the negligible information disclosed. In this case, if decision makers can be forced to move with an exogenous order, the resulting equilibrium is more efficient because exogenous ordering tends to aggregate more information. Its companion paper, *Robust Herding with Endogenous Ordering and Two-Sided Commitment*, investigates the two-sided commitment case.

To better understand the impacts of herding, in the paper *An Experimental Study of Herding with Endogenous Ordering* (in progress, joint with David K. Levine), we are designing some experiments to test the predictions of the theoretical model. We are wondering whether decision-making heuristics or rules of thumb are consistent with theoretical predictions or will they introduce a number of biases in herding behavior.

In another paper, *Group Reputation — A Model of Corruption*, I explore what group reputation is and model its formation and evolution. I define group reputation as an agent's belief based only on group signals, not on individual signals.

Individual reputation is derived from group reputation by adding individual signals. A model of group reputation of civil servants is constructed to identify the strategic behavior of bribers and bribees, the corresponding levels of corruption, and possible anti-corruption policies along with their effects.

Research Plan

In the immediate future, I plan to work on a new paper, *Herding with Payoff Signals*. My major question is: if people only observe choices from the predecessors, why do they not disclose private information truthfully at the beginning of the game? In fact, assuming non-disclosure seems puzzling because disclosing private information truthfully is a weakly dominant strategy. If people are able to coordinate by truthfully disclosing private information, herding never occurs. My hypothesis is that if people observe not only choices but also payoff signals from the predecessors, then they have incentive to manipulate their reports of their own private information. In this sense, herding with payoff signals is robust. I will compare herd behavior with payoff signals under three different settings: exogenous ordering, endogenous ordering (spontaneous ordering), and social optimal ordering (optimal experimentation path).

There are a few directions of exploration. One is asking whether there exists an Incentive Compatible Ordering to induce the individuals to report their information truthfully. If it exists, is it better than the endogenous ordering and/or exogenous ordering? Another direction is to investigate the settings with more than one social group. Individuals can observe inner group members' actions and payoff signals, but they can only observe outside group members' actions or some statistics of these actions. There are no payoff signals from outside group members. In this case, we could explore the phenomena of local conformity and global diversity. Additionally, new generations of individuals can be introduced. With new generations, we can investigate evolutions of fads, fashions and fragilities of mass behavior. Lastly, another direction of exploration is to incorporate some insights from behavioral economics into my model and explore some other issues, such as retrospective voting and coalition formation.