Research Statement

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I am a micro-economist with a specialization in dynamic games. My research emphasizes the application of game theory to comprehend real-world interactions and the development of innovative game-theoretical tools. My research agenda is structured around two primary themes: i) the dynamics of social movements and their impact on societal change, and ii) the effects of strategic complexity on human behavior.

In my job market paper, titled "Sequential Protest Formation," I explore the puzzle of protest participation, especially when dealing with a large pool of potential participants. Traditional models predict that individuals should not engage in such protests due to the associated costs, the negligible impact of their participation on the outcome, and the non-exclusivity of benefits to participants. To rationalize this seemingly irrational behavior, I propose a dynamic model of protest formation. In this model, players' incentives to participate stem not only from the direct impact on the likelihood of the protest's success but also from the indirect influence their participation might exert on others' decisions. Within the model, a large pool of potential protesters is given opportunities to participate in a protest at stochastic times. The protest succeeds if the number of participants exceeds a commonly known threshold. I show that an equilibrium exists where the protest has a positive possibility of succeeding, and the likelihood of its success is non-decreasing in the number of potential protesters.

My future research within the protest literature encompasses both theoretical analysis and experimental studies. On the theoretical side, my work in progress, "Problems, Solutions, and Revolutions," examines how societies reach the tipping point of social unrest. In this paper, I model the pre-revolution process by considering stochastic arrivals of problems and solutions. The rate at which problems arrive is exogenous, while the arrival rate of solutions depends on the government's effort. The citizens' payoff for changing the status quo is assumed to increase with the accumulation of problems. Consequently, a revolution materializes if the accumulation of problems surpasses an endogenous threshold. On the experimental side, my work in progress, "Experimental Evidence of Sequential Protest Formation," co-authored with Bea Ahumada (a fellow grad student), aims to test whether individuals' decisions to participate in a sequential protest are influenced by the impact their participation has on others' actions.

In addition to the aforementioned work in progress, I plan to explore the implications of protests on various aspects, including elections, policies, government spending, and welfare.

In my second line of research, my paper titled "Simplification Games" explores the behavioral implications of the innate human tendency to favor simplicity over complexity. Specifically, I enhance the sequential game framework by assigning a complexity cost to each strategy. In this context, I assume that players' preferences are influenced by both the outcome of the sequential game and the complexity associated with their chosen strategy. Consequently, each player decides whether to adopt a detailed yet intricate strategy or opt for a simple rule that might yield a less favorable outcome. In the paper, I characterize this framework as a new type of game—a simplification game—and show the existence of the usual equilibrium concepts.

Building on this novel framework, I propose simplification games as an instrument to explain individuals' apparent "mistakes" in empirical applications of games, and as a mechanism for equilibrium refinement. To illustrate the former, I use experimental results from the centipede game to show that if people have complexity considerations, not ending the game in the first move can be viewed as rational behavior. As for the latter, I formalize the notion that an equilibrium *survives* complexity consideration if the rewards for navigating its complexity are sufficiently large.

My future research in this area is multifaceted. On the theoretical front, I aim to employ simplification games as a tool to establish an incentive-based foundation for certain rationality bounds, a key focus in behavioral economics. Intuitively, if players account for the complexity of their strategies, simplification games can shed light onto concepts such as bounded memory, satisficing, present bias, and prospect theory. At the same time, I aspire to extend the simplification games framework by lifting the assumption that players' complexity preferences are common knowledge. Instead, I will transition towards a more realistic scenario in which each player's complexity preferences constitute her private information.

On the empirical front, I aim to delve deeper into experimental outcomes that diverge from theoretical predictions, investigating whether the observed behavior aligns with a preference toward simple behavior. I intend to begin by extending my centipede game analysis to a more general framework. This would encompass scenarios where each player has more than two moves and where the complexity inherent to a player's strategies can vary among participants, potentially being private information. Subsequently, I intend to further investigate classical games, including the finitely repeated prisoners' dilemma and the ultimatum game. In the long run, my research endeavors will span across behavioral industrial organization and the adoption of heuristics.