

Research Statement

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I am a behavioral microeconomist working at the intersection of economic theory and experimental methods. Recurring themes in my research are problems of coordination and equilibrium selection, the impact of inequality, and institutional design in the presence of uncertainty. This research statement first discusses my work on coordination, beginning with the job market paper. The second section discusses my work in the area of bargaining and information economics. Both sections include plans for future research in the respective areas.

Coordination, Equilibrium Selection, and Social Norms

Schelling (1960) was among the first economists who saw the existence of multiple equilibrium outcomes as a pervasive fact of life that needs to be appreciated and understood. In the presence of multiple equilibria, the question that emerges is what features of an environment or history may lead players to expect and hence play a particular equilibrium. My research on coordination and social norms uses experiments as a tool to study this question.

Current Work

A long-standing puzzle in social sciences is why some social norms persist, even when widely believed to be inefficient (Elster, 1989). Examples include the ban of same-sex marriage, norms of discrimination, and norms of retribution and personal revenge. In my job market paper **Social Change and the Conformity Trap** (co-authored with James Andreoni and Nikos Nikiforakis), we study these phenomena by presenting evidence from a novel lab experiment. In our experiment, all members of a society of 20 individuals repeatedly choose between two actions: *Blue* or *Green*. At the start of the experiment, everyone prefers *Blue*. However, individuals' preferences gradually change over time, such that by the end of the experiment everyone prefers *Green*. The difficulty is that coordination on either of the actions is socially desirable and failures to coordinate generate costs. In line with the existence of a social norm, these costs are proportional to the number of people choosing the opposite action.

Using this setting, we show that social groups may fail to adapt to changing circumstances. The reason is that the costs to non-conformity are higher for instigators of change, providing incentives for individuals to wait until someone else deviates first from the status quo. If everyone acts in this way, however, societies can get caught in a *conformity trap* – a situation in which socially beneficial change fails to occur. In a variety of conditions, we identify factors that could promote or hamper social change. For example, faster feedback about others' actions, which could be interpreted as the accelerated speed of information transmission in the age of social media, rather than promoting

social change, promotes conformity. In contrast, opinion polls about individuals' preferences help most groups break out of the conformity trap. Our results are relevant for the theory of equilibrium selection, emphasizing that – in addition to payoff and risk dominance (Harsanyi and Selten, 1988) – the history of play is an important factor driving expectations and behavior.

In another paper **Leadership, Inequality, and Coordination** (with Aurelie Dariel and Nikos Nikiforakis) we experimentally investigate the impact of bonuses on a leader's effectiveness in promoting group coordination. We use the model of leading-by-example, in which the leader is a first-mover who commits to a chosen effort level. Preferences are fully aligned and earnings are maximized if everyone chooses the highest effort. However, choosing a high effort is risky, because of the high cost when groups fail to coordinate (Van Huyck et al., 1990). Our results show that leaders efficiently coordinate group behavior, but only when there is no bonus. The presence of a bonus causes inequality and drastically reduces the leader's ability to coordinate behavior. Informing leaders of the potential perils of bonuses for coordination does not help: most leaders still choose a high bonus. We conclude that the compatibility of different fairness norms is a key aspect for efficient team work.

Future Work

As part of the research agenda on dynamic coordination games, I plan on using the laboratory to study the interaction between inequality and social uprisings. There is an active theoretical literature on regime change, oppression, and timing of revolutions (Angeletos et al., 2007). Empirical evidence suggests that the ability to communicate effectively is a crucial ingredient leading to successful uprisings. Following this, one goal of the experimental design will be to better understand the role of rumors, word-of-mouth, and media in causing or preventing change. Second, I am interested in how different reactions of the ruling party – e.g., bribing or punishing – affect the success of revolutions and social movements.

The underlying theme of the above-mentioned papers is equilibrium selection in coordination games. Since the seminal work of Harsanyi and Selten (1988), coordination games have attracted major attention. In spite of this, there is no unified theory that is able to organize well the salience of different focal points – e.g., payoff-dominance, risk, history, or fairness. In the future, I intend to conduct experiments designed to examine these aspects, providing a basis for extending Harsanyi and Selten's theory of equilibrium selection to more general (dynamic) environments.

Bargaining, Adverse Selection, and Cheap-Talk

The presence of informational asymmetries in markets can have a devastating effect on efficiency. The reason markets sometimes collapse under incomplete information is the inability of the price

mechanism to convey information about the qualities of goods. The research presented in this section shows that there are simple and natural institutions that can alleviate these problems.

Current Work

The paper **Meet the Lemons: An Experiment on How Cheap-Talk Overcomes Adverse Selection in Decentralized Markets** (forthcoming in *Games and Economic Behavior*) reports on an experiment in which adverse selection is predicted to preclude trade of high quality goods. However, when allowing for costless and non-binding communication there exists a partially separating equilibrium that results in a substantially higher efficiency level than the adverse selection benchmark. The result hinges on the presence of matching frictions, which provide incentives for sellers to be truthful (truth-telling allows low quality sellers to attract more buyers, compensating for the forgone opportunity to potentially extract high prices when mimicking high quality sellers). The experimental results confirm the theoretical predictions of the partially separating equilibrium remarkably closely. Communication is informative and improves efficiency compared to the benchmark without cheap-talk. I also show that truth-telling is not explained by lying aversion or pro-social preferences, but is due to the pecuniary incentives of the partially separating equilibrium.

In a series of papers, Olivier Bochet and I study bargaining as a mechanism to transmit information. In real-life situations, it is common that buyers and sellers bargain for some time over prices before an agreement is reached, for instance in the housing market. This process tends to be costly for both parties, e.g., because of time frictions. A central result in the bargaining literature is that the presence of frictions allows bargaining parties to extract information from the other side, leading to trades that would not be possible if only a single offer can be made (Deneckere and Liang, 2006). The downside of bargaining institutions is the delay associated with repeated offers.

In the paper **Better Late than Never? An Experiment on Bargaining under Adverse Selection** (*2nd round R&R at International Economic Review*), we show theoretically that the above intuition remains true even if the bargaining game has a finite number of periods. We then conduct an experiment to test the predictions and show that buyers indeed gather information about sellers by using specific price sequences. This leads to substantial higher rates of trade. Unfortunately, we also observe a persistent over-delay before trade occurs beyond the theoretically expected time costs, which lowers efficiency below the welfare levels observed in a take-it-or-leave-it offer institution. We identify possible channels for over-delay in the form of fairness preferences and loss aversion. Thus, there are important behavioral deviations from the standard model that are detrimental to the efficiency of bargaining under incomplete information.

In a related paper **Information Transmission through Bargaining: Experimental Evidence** (*under review at Econometrica*), we extend the above analysis to situations in which several buyers compete for the opportunity to trade with the seller. In line with theory, we find that frictions are essential to generate trade and that competition further amplifies this positive effect.

In the presence of competition, however, theory predicts that the effectiveness of bargaining in promoting information transmission critically depends on the transparency of a trading institution. In particular, transparency (i.e., information regarding competitors' offers) lowers the efficiency of a market (Hörner and Vieille, 2009). In the experiment, however, transparency has a positive effect on efficiency. The effect is most pronounced in the presence of risk-averse buyers, who bid more aggressively if offers are observable.

Future Work

Within the research agenda on bargaining under uncertainty, the paper **Bargaining on Multiple Issues: Bundles, Information, and Hagglng** studies bargaining situations in which agents simultaneously negotiate the terms of trade for multiple items. Compared to the standard approach where there is a single item, this extension introduces several new questions relating to the type of offers that can be made and the amount of information bargainers hold. We have already collected the data. An intriguing result is that when subjects have more information about each others' valuations, outcomes tend to be less efficient than in the presence of incomplete information. The reason is that when agents are aware of the possible surplus, they are reluctant to make concessions and insist on receiving a large share of the surplus.

A common thread in the experimental results discussed above is that subjects' aversion to inequality is a relevant determinant of behavior. A promising avenue of research in the area of bargaining is to systematically examine norms of inequality under incomplete information. This question is relevant in a range of issues, e.g., in the context of climate change where effective emission reductions hinge on our ability to share the cost in a fair way in the presence of large uncertainties.

I am also interested in the theory of coalitional bargaining (Ray and Vohra, 2015). In this literature, agents can write binding agreements. Binding agreements are potentially useful, because they can contractually enforce efficient behavior and at the same time meet participation constraints by allocating the efficiency gains in a way that benefits everyone (Coase, 1960). The question that emerges is: if binding agreements are possible, do negotiations always lead to an efficient outcome?

I address this question in the paper **On the Nature of Externalities Impeding Efficient Contracting**. The main deviation from the previous literature is that I allow agents to exclude cooperation with a subset of coalitions before the negotiation process starts. These commitments are interpreted as contract or coalition-specific investments or actions, e.g., the adoption of technological standards. I find that binding agreements lead to efficiency in the absence of externalities. However, efficiency is not guaranteed when there are externalities that give rise to free-riding incentives. Hence, if commitments are possible, there are externalities that preclude efficient contracting.

In a related project, **What Causes Gamson's Law? Experimental Evidence on Coalitional Bargaining and Commitment** (joint with Aaron Kamm), we use a model of coalitional

bargaining to provide an explanation for an old puzzle in political science. Gamson's Law refers to the empirical observation that the representation of a political party in a government tends to be proportional to the number of seats the party has in the parliament. This is at odds with bargaining theory and also with previous experimental evidence. Our experimental design examines several factors which may help reconcile Gamson's Law and economic research. We identify the possibility of commitment as a promising explanation: if parties first commit to a coalition, and only then bargain over substantive issues, the theoretical predictions as well as the experimental results are in line with Gamson's Law.

In the future, I plan to extend coalitional bargaining models by introducing the possibility of incomplete information. The impact of incomplete information, while well-understood in bilateral bargaining, is largely unknown in multilateral bargaining and coalition formation. The difficulties that arise are linked to signaling and large multiplicities of equilibria. Experiments are a useful and, in this research area, so far unexploited tool to select among equilibria. They are likely to play an important role in the development of a theory of multilateral negotiations under uncertainty.

List of Papers

Andreoni, James, Nikos Nikiforakis, and Simon Siegenthaler, "Social Change and the Conformity Trap," *job market paper*.

Siegenthaler, Simon, "Meet the Lemons: An Experiment on How Cheap-Talk Overcomes Adverse Selection in Decentralized Markets," *Games and Economic Behavior* (forthcoming).

Bochet, Olivier and Simon Siegenthaler, "Better Later than Never? An Experiment on Bargaining under Adverse Selection," *R&R at International Economic Review*.

Bochet, Olivier and Simon Siegenthaler, "Information Transmission through Bargaining: Experimental Evidence," *under review and available at www.simonsiegenthaler.com*.

Dariel, Aurelie, Nikos Nikiforakis, and Simon Siegenthaler, "Leadership, Inequality, and Coordination," *available upon request*.

Siegenthaler, Simon, "On the Nature of Externalities Impeding Efficient Contracting," *available upon request*.

Bochet, Olivier, Manshu Khanna, and Simon Siegenthaler, "Bargaining on Multiple Issues: Bundles, Information, and Haggling," *work in progress*.

Kamm, Aaron and Simon Siegenthaler, "What Causes Gamson's Law? Experimental Evidence on Coalitional Bargaining and Commitment," *work in progress*.

Other References

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