Research Statement

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I am a microeconomic theorist. In my research, I use advance methods to answer questions of policy and practical relevance. The type of questions and topics I am interested in are broad, but mainly related to law, innovation, industrial organization, health, and organizations. I take applications seriously, but I also believe there is value in generality when it helps understand the underlying forces that drive the phenomenon of study.

Next, I provide a summary of my current research agenda and future plans.

Information shapes decision-making by shedding light on the relationship between actions and outcomes. When constructing institutions that align private incentives with social objectives, information can also be used *directly* in the generation of incentives by making outcomes a function of information held by the participants. A patent can be granted to someone that discovered a relationship between two variables (such as the relationship between a gene and a disease). Liability can, in principle, depend on the information that the injurer had before the damage occurred (how safe the injurer though their actions were).

In my research, I study situations where information that agents acquire and use to inform their actions (whether and how to continue doing research, whether to launch a product) is also used as an input to affect incentives (patents and liability). I'm interested in how the interrelationship between information and actions affects the way firms are organized, how research and development is conducted, and the legal and economic institutions that prevail.

In my job market paper, I study the dynamic allocation of costly and scarce resources across different R&D projects. There is uncertainty about the projects' feasibility and difficulty, but this uncertainty is gradually resolved while the agents work on the projects. I analyze the efficient allocation of resources for complementary projects and characterize the situations

where it is optimal to work on the projects in sequence and simultaneously. I also study whether efficiency is achieved in the context of patent races. From a technical perspective, the problem of developing complementary innovations can be seen as a multidimensional information acquisition problem, and different patent policies will have different consequences in terms of the relationship between information acquire and payoffs.

An analogous design question arises in the context of liability. Limited liability induces firms and individuals not only to take higher risk that what is socially optimal but also to acquire less information about these risks. In joint work with Bruno Strulovici we consider the design of liability schemes when part of the information acquired by the injurer can be used as a part of the mechanism. The process, however, is only triggered if there is a damage. We compare the optimal scheme under different scenarios, in particular depending on what can be observed ex-post about the information held by the injurer at the time of their decision.

In the previous papers information is acquired dynamically over time. With Quitzé Valenzuela-Stookey we take a different approach and look at a stationary setting were information is desegregated in the economy. The principal in this case cannot observe the individuals' information, but observes market outcomes that, in equilibrium, might reveal the aggregate information. The principal commits to a decision rule that maps the market outcome to an action. We characterize the set of distributions of states, actions and outcomes that is implementable in this setting.

Looking forward, I plan to continue working on the implications of information on the the design of laws and policies that produce more efficient societies and profitable organizations. In particular, I'm interested in pursuing several research avenues related to my job market paper: organizations are sometimes composed of different units working towards a joint goal. With complementary projects, what is the optimal information scheme for a manager that oversees different units? Winter studies the optimal information about the actions of agents working on complementary tasks, but what about information about the progress or outcomes of these projects? In which contexts is transparency optimal?