Research Statement: Philipp Strack

I am a microeconomic theorist interested in how people behave and interact in dynamic situations. My research explores questions of mechanism design, learning, dynamic non-expected utility models and contests.

Learning and the Timing of Decisions: Consider a customer who chooses between two products. Is she more likely to pick the product which maximizes her utility when she chooses quickly? Fudenberg, Strack & Strzalecki (2016) study the correlation between the timing of decisions and their likelihood of being correct. We find that in a sequential sampling model (Wald, 1947), where the difference between the utilities of the choices is ex-ante unknown, quick choices are on average more likely to be correct. This provides an explanation for the common empirical finding that quick decisions tend to be better in experiments (cf. Swensson, 1972; Luce, 1986; Ratcliff & McKoon, 2008).

Learning under Misspecification: How do economic agents with misspecified beliefs learn? Consider, for example, an agent who is overconfident about her own ability and observes the output of her team. As she overestimates her own productivity, she will be disappointed by the team's output and thus tend to think that her team mates are of lower ability than they truly are. Heidhues, Koszegi & Strack (2016) show that this miss-inference caused by the agent's overconfidence is self-reinforcing and drives her beliefs systematically away from the truth. The ability to learn consequently harms overconfident agents as learning leads them to worse decisions. In Fudenberg, Romanyuk & Strack (2016), we characterize long-run beliefs and actions for general misspecified beliefs under a Binomial prior.

Social Learning: Economic agents often do not only learn from their own experience. A customer could learn about the quality of a product by observing other customers' choices. In Harel, Mossel, Strack & Tamuz (2016), we explore how rational agents learn from the actions of others who face similar decision problems. We show that only a small fraction of the original private information can be learned from actions. This result implies that decentralized information aggregation with rational agents will fail in many contexts and provides a justification for institutions that aggregate information. Heidhues, Rady & Strack (2015) show that communication through cheap talk messages can sometimes incentivize efficient information acquisition and transmission.

Mechanism Design: Many contracts - like phone contracts, gym memberships, repeated procurement auctions - govern long-term relationships. The recent literature in dynamic mechanism design studies how to structure such long-term contracts in order to maximize a given objective like social welfare or revenue. In Kruse & Strack (2015, 2016a), we derive optimal contracts for irreversible investment and general optimal stopping problems. In Bergemann & Strack (2015, 2016), we explore optimal contracts for repeated sales and procurement situations. Gershkov, Moldovanu & Strack (2016) derive a revenue maximizing sales mechanism when buyers arrive stochastically and time their purchase strategically. In Strack & Kruse (2016b), we want to analyze under what circumstances local incentive compatibility conditions imply global incentive compatibility in dynamic mechanism design problems. Fu, Immorlica, Lucier & Strack (2015) consider the optimal design of a static auction when the designer does not know the distributions of the bidders' valuations and takes a worst case approach.

Dynamic Models of Non-Expected Utility: While expected utility (EU) is well understood in a static as well as in a dynamic context, a lot of research on non-EU preferences has focused on static contexts. Ebert & Strack (2015) consider an extension of prospect theory (PT) to the dynamic context. We find that a *naive* PT decision maker without commitment will never stop gambling, which predicts that she will always go bankrupt in a casino and never sell a stock even if it is profitable to do so immediately. In contrast, Ebert & Strack (2016) show that a *sophisticated* PT decision maker without commitment will never start gambling, i.e. will behave like an infinitely risk-averse EU agent. Viefers & Strack (2016a,b) explore anticipated regret (Lomes & Sugden, 1982) in a dynamic model both analytically and experimentally. We find that subjects are reluctant to accept an offer below the best past offer and show that this is consistent with the minimization of anticipated regret.

Contests: Many economic situations take the form of a contest. As fund managers' compensation mainly depends on their relative performance, they should behave as if they were competing in a contest. Strack (2016) studies the competition between fund managers in a dynamic financial market model à la Black Scholes. The paper proves that in equilibrium, fund managers use inefficiently risky investment strategies. The more competitive the managed fund market becomes, the larger the resulting welfare loss. As in 2013, 46.3% of US households held investments into managed funds valued at 17.1 trillion US dollars, this excessive risk-taking is clearly relevant for social welfare. Seel & Strack (2013, 2015) develop a novel continuous time contest model where contestants learn about their own performance over time, but not about their competitors' performance, and can dynamically decide when to stop exerting effort. Lang, Seel and Strack (2014) study the role of deadlines in such a dynamic contest model.