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Thesis Title: **“Essays on the Evolution of Preferences and Network Interactions”**

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Abstract:

This doctoral thesis explores the theme of preference evolution in the course of social interactions, as well as the interplay between individuals' preferences and a social environment and the impact of both on social outcomes. It consists of three parts.

The first part studies the evolution of social preferences such as altruism, selfishness or reciprocity when individuals are repeatedly involved in one-shot bilateral interactions modeled by the prisoner's dilemma game. Individuals are heterogeneous not only in their social preferences (subjective preferences over the outcomes of the game) but also in their ability to observe their opponents' preferences (so-called cognitive intelligence). Coevolution of social preferences and cognitive intelligence is studied within both static and dynamic frameworks.

The second part delves deeper into the composition of individuals' preferences. It disentangles the idiosyncratic and the interactional preference components and studies their interplay in the framework where interactions take place on a fixed network. It appears that heterogeneity in idiosyncratic preferences changes equilibrium outcomes in a non-trivial fashion: some equilibria disappear and qualitatively new ones appear instead. A particular outcome, in which everyone's idiosyncratic preferences are satisfied, is a unique efficient outcome in many games on networks, but it is not always an equilibrium.

The third part further develops the proposed framework and considers how heterogeneous preferences can influence the formation of an interactional structure (a network). In this model individuals are allowed to choose their interaction partners simultaneously with their action choice in each interaction. Despite the symmetry and simplicity of the setting (binary action choice and two types of idiosyncratic preferences), quite irregular network structures can arise in equilibrium. This finding suggests that heterogeneity in action preferences may already explain a large part of observed irregularity in endogenously formed networks.