

Economic theory is used to analyze interactions between consumers, producers, participants of the market, but also ordinary men in the street using so-called game theory. Mathematical approach led economists to describe repetitive mechanisms of the behavior of people participating in the games. And here, by games we can understand almost all possible situations, where there is an interaction between at least two people – game theory allows to provide some insights into both: multi billion dollars business transactions as well as strategies of man and women on a first date. But the standard games theory assumes, that people benefit only from material profits, and, as psychology suggests this is not always the truth. In order to use mathematical language of game theory, often we have to deal with the solutions, that do not correspond with the decisions made in practice.

In this project, we are still taking game theory very seriously, and treat it as a useful tool, but we also allow players for altruistic behavior – which means that it is rational for them to make decisions that are not necessarily beneficial for their profits, but can provide satisfactions from wellbeing of other players. As many studies shows, this approach is much closer to a natural behavior of humans.

This game theory extension, that will be provided by us in this project, even though seems to be so simple and obvious, was never before implemented in the mathematical description of the interactions between people. Allowing players for empathetic decisions is a complex problem when it comes to a game theory. It provides more randomness to the games, and makes solutions no longer straightforward, as it was when the players was simply selfish.

Our project is mostly theoretical, but we will look at the aspect of empathy from several angles. First, we will analyze optimal strategies of players that are responsive to wellbeing of others. Second, we will look at the problem from the perspective of game designer who wants to provide and effective game for empathetic players. Third, we will analyze concrete relationship – between workers and managers, and how allowing for empathy correlate with business cycle and wages. Finally, we will test theoretical solutions in practice – by set of experiments we will provide evidence whether games theory shows the same mechanisms that we can observe between real people.