

**COST Action IC1205 on Computational Social Choice: STSM
Report**

Applicant: Ali Ihsan Ozkes

Home institution: Ecole Polytechnique

Home country: France

Host: Burak Can

Host institution: Maastricht University

Host country: Netherlands

Dates: 01/07/2013 - 31/07/2013

I was hosted by Dr. Burak Can at Maastricht University where I was allowed to benefit from facilities as well, because the School (of Business and Economics) recognized the visit. During the visit, I worked, closely and on a regular basis, with Dr. Can and Dr. Ton Storcken.

With the aforementioned researchers, whose previous research is a best match for the question of the project, we made significant progress on the analysis of measuring polarization of social choice profiles that are, in fact, lists of linear orders on sets of alternatives.

We initially discussed and shared our knowledge on measures of polarization in other contexts of economics or politics since there is no precedent to our work in social choice theory. This coverage of literature convinced us about the relevance and importance of the question as well as defining the possible ways of approaching the question.

Consequently, we managed to conclude with a set of properties that captures the essence of the conceptualization we agreed upon. This led to some preliminary results. Our conceptualization is, in spirit, closely related to the approach of the income polarization literature which also associates the notion of polarization with across group heterogeneity as well as within group homogeneity. We furthermore postulate that the polarization should be an aggregation of conflicts generated by pairs of preference groups. With some other regularity properties (such as the requirement that the maximally polarized society should be the one where the population is equally divided to two totally disagreeing preferences whereas the minimally polarized one is the unanimous profile) we reached some initial results some of which point to a set of functions that satisfy these properties but what is yet standing is the characterization of the measures that satisfy these plausible properties.

To conclude, this visit was very fruitful, providing the opportunity of initiating a collaboration that will eventually produce a very important contribution to social choice theory.