# The effects of party competition on consensus formation

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The fight over setting the political agenda is one of the basic mechanisms of party competition of every democracy. However, this political game may have side effects in other aspects of the public debate. One aspect of general interest is how it may alter consensus formation processes among citizens, which may result in states of consensus, polarisation, or opinion fragmentation in the population. In this paper, we study the interrelated dynamics of two processes affecting opinion dynamics when multiple issues are debated.

First, we consider a noisy bounded–confidence model to describe the dynamics of citizens' opinion and consensus formation [1]. In this model, individuals typically hold an opinion, which can be modelled as a vector in a multidimensional space, and that changes upon interaction with other individuals based on pressure towards peer alignment. However, such interactions only occur if opinions are similar enough, as individuals whose opinions are *too different* may never listen to —or, even more, convince— each other. Crucially, the value of the tolerance threshold strongly influences the state of the system in the steady state, with outcomes ranging from consensus to fragmentation or polarisation [2].

Aside of polarisation, our other focus in this work is on the effects of party competition on voters. In political science, most research on party competition originates from spatial voting theory as introduced by Downs [3], where citizens hold political positions on a multidimensional political space and vote for parties according to the distance of their positions to party positions. In this context, parties compete for vote shares by *adjusting the saliency* given to the different political issues (e.g. by campaigning) to promote aspects of the debate in which they hold favourable positions relative to the electorate [4, 5]. These changes in saliency affect in times the perception of opinion distance between citizens and their possibility of interaction, generating cou-

pling between both processes.

We use agent–based simulations for the study of our model. For simplicity, we focus on the case of $D = 2$ dimensions and $K = 3$ political parties, which already serves to illustrate the richness of possible model outcomes. We find that the effects of party competition on consensus formation are rich and non-trivially dependent on the configuration of party positions in the political space. We illustrate that —as one would intuitively expect— there are party configurations that foster polarisation for a wide range of model parameters. More surprisingly, we also show that other party configurations have the opposite effect, and can facilitate reaching a consensus state that could otherwise not have been achieved. We find that these differences in outcomes are generally robust to model parameters and are mainly dependent on the constellation of party positions. Our results serve to emphasise the importance that absolute and relative party positions have in the creation of polarisation and illustrate the richness of possible outcomes of interrelations between party competition and consensus formation.

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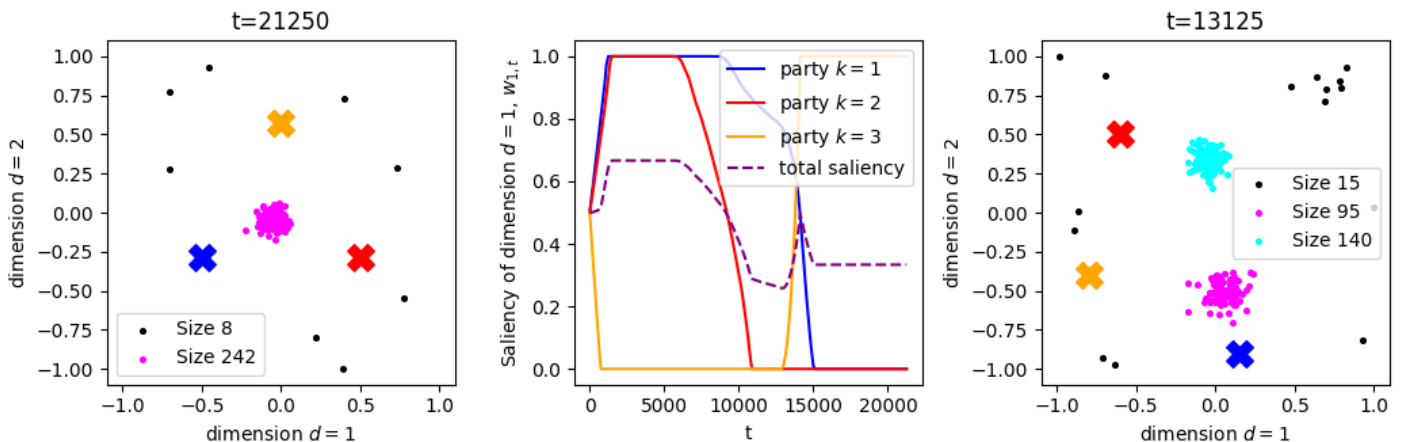
FIG. 1. Left: Illustration of results from a simulation run where party competition fosters consensus. Dots are the opinions of a population of 250 citizens in the steady state, and the crosses represent the fixed party positions. Center: Evolution of each party's support for dimension $d = 1$ of opinions for the scenario shown in the left pannel, and the resulting total saliency perceived by the population. Shifts in saliency support enhance consensus. Right: Illustration of results from a simulation run where party competition fosters polarisation.