

## Research proposal: a test of the *Schelling model of spatial segregation*

There is ample evidence that immigrants tend to live close to other members of the same group and, often, this also applies to their children (Musterd and van Kempen 2009). This phenomenon has been extensively researched, especially when applied to the spatial concentration of non-European ethnic minority groups. A reduction in the levels of neighbourhood ethnic concentration is typically regarded as a desirable outcome for both minorities and wider society, and has stimulated most of research on this topic. Although ethnic concentration is not necessarily always negative for the groups themselves – as several studies have shown (e.g. Knies, Nandi et al. 2016, Nieuwenhuis, Hooimeijer et al. 2017) – it is often associated with neighbourhood poverty (Clark 1986, Jivraj and Khan 2013) and poorer labour market outcomes (Clark and Drinkwater 2002). These associations persist into the second generation (Zuccotti and Platt 2017), and recent US studies also suggest that ethnic minorities are often more likely to remain in more concentrated and more deprived neighbourhoods over their life course (Swisher, Kuhl et al. 2013, South, Huang et al. 2016). Ethnic concentration of both majority and minority populations has also been considered an impediment for social cohesion (Uslaner 2012), by preventing individuals from interacting with others that are different.

While the literature considering the consequences of ethnic concentration and that evaluating the size and scale of concentration/segregation is vast, there is a more limited understanding of the drivers and reasons behind the persistence of ethnic minority concentration and of its association over time with spatially concentrated deprivation. This is especially the case in the European context. Explanations for this phenomenon are varied, but the literature has pointed to two in particular: discrimination in the housing market (also defined as place stratification processes: see Logan and Alba 1993) and individuals' preferences to live close to members of the same group.

In 1971, a paper published by Schelling (1971) made, in fact, an important advancement in acknowledging that individuals' preferences for in-group members are an important factor in explaining why the spatial segregation of different groups (Black Africans and Whites, in his study) persists over time. Using agent-based modelling, the author argues that mixed neighbourhoods are unstable in nature, and that a tendency towards segregation is always present. Within this model, the concept of "tipping" is fundamental. Tipping refers to the maximum level of concentration of members of another group that an individual can tolerate in the neighbourhood, and which, if surpassed, will theoretically push the individual to leave such neighbourhood. In its original version, the model suggests that segregation will persist – and will become inevitable – also in the presence of individuals with relatively "open-minded" views about sharing their neighbourhood with members of other groups (i.e. individuals with high tipping levels). Although in practice there is no such thing as an "absolutely segregated society" – nor mixed neighbourhoods are necessarily unstable (Card, Mas et al. 2008, Ong 2017) – this theoretical model is useful for explaining why segregation levels persist over time. While discrimination in the housing market is for sure a valid explanation behind the persistence of spatial inequalities, the model demonstrates that preferences play a major role. Even with no housing discrimination, the spatial segregation of groups will remain.

Since its publication, many studies followed the ideas of Schelling to study the dynamics of neighbourhood segregation. A key issue in these studies regards the identification of tipping points, which in Schelling's initial model are hypothetical. Tipping points have been identified by means of unique surveys on preferences for own neighbourhood's ethnic composition (Clark 1991, Clark and Fossett 2008), but also by means of analysing aggregated census data with regression discontinuity techniques (Card, Mas et al. 2008, Aldén, Hammarstedt et al. 2015, Ong 2017). Moreover, of interest has also been the role of other variables that are potentially relevant to understand neighbourhood segregation, such as the socioeconomic characteristics of the neighbourhood and that of individuals (Aldén, Hammarstedt et al. 2015).

For the purposes of the summer school, I would like to propose a research project in which we identify tipping points for different cities (to be decided which ones) and use these to simulate trends in spatial segregation (like in Clark and Fossett 2008). The idea would be to develop simulations that are specific to each city and which can provide us with a comparative perspective on how segregation might evolve in the different contexts. Following Card, Mas et al. (2008), who estimate tipping points using regression discontinuity, this would imply working with cities for which we can obtain detailed neighbourhood Census data for different years. We could, for example, do a comparative study of cities in different countries; or cities that are known for being more tolerant than others (e.g. Card, Mas et al. (2008) show for the US that tipping points are higher in more tolerant cities). Or we could also go for a more in depth analysis, perhaps focusing on one country only, and work with Census microdata or panel data (e.g. the Sample of Anonymized Records or the UKHLS in the UK) in combination with aggregated Census data. This would allow using additional information in the creation of tipping points – such as the role of migrant background, individuals' socioeconomic characteristics or even the neighbourhood of origin –, which would then lead to developing more informed simulations.

Although the details of this potential research proposal would need to be further discussed, especially in terms of methodology and feasibility, overall I believe this could be an interesting learning exercise – both for students and coordinators – that eventually leads to a paper collaboration.

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