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Migrant-Native Exposure in Danish Lower Secondary Schools, 1985-2019

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Abstract

The present report describes the changes in migrant-native exposure within lower secondary education in Denmark from 1985 to 2019. On a backdrop of Gordon Allport's contact theory and the assumption that intergroup contact affects long-term social integration on a societal level, the analysis is guided by Peter M. Blau's macrosociological theory. It is shown that while overall intergroup exposure in secondary school is increasing in pace with immigrant inflows, we see the contours of structural sorting mechanisms. Over time, it is increasingly migrant and native children of low socio-economic status experiencing increasing intergroup exposure rates on a group-level. While migrant and native children of high(er) socio-economic status increasingly, on a group-level, are attending schools in which their ingroup has the 'numeric advantage.' On a municipal-level, the absolute size of the immigrant group is found to be the best determinant in explaining processes of migrant-native separation between schools in the school landscape.

Keywords: Secondary school, Intergroup contact, Segregation, Exposure.

We cannot have Buddhist friends
if there are no Buddhist around
— Peter M. Blau, *Crosscutting Social Circles*

In an overpopulous state foreigners and metics
will readily acquire the rights of citizens,
for who will find out?
— Aristotle, *Politics*

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Danish summary

Nærværende rapport har undersøgt graden af gensidig eksponering mellem "danske" og "migrantbørn"[1] i udskolingen over perioden 1985-2019. Med afsæt i Peter M. Blaus makrosociologiske teori – her formuleret som en teori om 'mulighedsstrukturer' (eng.: *opportunity structures*) – er de strukturelle betingelser og begrænsninger for eksponering ligeledes blevet undersøgt. I analysen afdækkes det, at vi ser en stigende eksponering mellem danske og migrantbørn på nationalt niveau. Antallet af skoler med totalt fravær af migrantbørn falder fra 900 i 1985, til 401 i 2019 – et fald, der ikke kan tilskrives, at der er færre skoler i "skolelandskabet". Dog observeres der relativt store lokale forskelle og forskelle på gruppeniveau i eksponeringsgraden. Den samlede population af migrantbørn i udskolingen er over hele perioden koncentreret i specifikke kommuner – særligt i København og nabokommunerne, samt Aarhus og Odense, om end denne fordeling mellem kommunerne er blevet mere "jævn". Den gennemgående strukturelle betingelse for eksponering er *størrelsen* af migrantpopulationen. Hvorend åbenlys denne observation må fremstå, ser vi, at størrelseseffekten virker paradoksal i de empiriske observationer. Der observeres en stigende eksponering, i takt med migrantpopulation vokser ved at flere skoler i "skolelandskabet" optager en migrantelev. Samtidigt ses det at i takt med migrantpopulationen lokalt opnår en "kritisk masse", bliver segregeringsprocesser aktuelle, hvorefter eksponeringsgraden er faldende, idet – nogle, ikke samtlige – migrantfamilier søger mod skoler med en allerede høj migrantpopulation og dermed sænker den potentielle eksponeringsgrad i de omkringliggende skoler. Derfor er *masse* (eng.: *density*) i skolelandskabet blevet undersøgt. Analysen afdækker en stigning i antallet af privatskoler og en faldende gennemsnitlig skolestørrelse (for 8. og 9. klasse alene), der forklarer dele af de *strukturelle betingelser* for den stigende migrant-isolering på specifikke skoler. Privatskoler er ligeledes den skoletype med mindst fald i skoler med totalt fravær af immigrantbørn, men også den skoletype med størst stigning i skoler, hvor migrantbørn er majoriteten.

Ydermere afdækker analysen, at der er systematiske forskelle i sandsynligheden for at gå på en skole med høj eksponeringsgrad (i.e., høj andel migrantbørn) betinget af hhv. indkomst– og uddannelsesgruppe. For migrantfamilier gælder det, at jo højere indkomstgruppe, des

1. Et migrantbarn er defineret som et barn, der ikke er født i Danmark, eller hvor *begge* forældre er indvandrere, mens et dansk barn er defineret som et barn, hvor den ene forælder som minimum er dansk.

større sandsynlighed for at gå på en skole med høj *indgruppe-eksoponering*, altså større sandsynlighed for at gå på skole med andre immigranter. For danske familier er der ligeledes større sandsynlighed for *indgruppe-eksponering* (skoler med få immigrantbørn) for de højeste indkomst– og uddannelsesgrupper. Det er en differentiering, vi ser blive mere systematisk manifesteret med tiden efter 1985, og særligt mellem årene 2005-2015.

I et integrationsperspektiv betyder de strukturelt differentierede forskelle i eksponeringsgraden på gruppeniveau, at det "integrationspotentiale", der er iboende idealet om den socialdemokratiske folkeskole, ikke er fuldt realiseret, fordi immigrantbørnene i stigende grad bliver koncentreret på skoler, der i forvejen har en høj andel migrantbørn (om end antallet af skoler med udelukkende migrantbørn har været faldende de seneste år), samt at vi i et tidsperspektiv ser konturerne af en stadig mere tydelig forskel mellem hvilke socioøkonomiske grupper, der går på hhv. skoler med høj og lav andel af migrantbørn.

1 | Introduction

> *The public school shall prepare the pupils for participation, co-responsibility, rights, and duties in a society with freedom and democracy. Therefore, the school's work shall be characterized by intellectual liberty, equal status, and democracy.*
>
> — §1,3 in the Public School's objects clause

Ideas of what 'binds' a society's members together are not new. Rather, these ideas has a central place in classic sociology. Émile Durkheim formulated the idea that the interdependence in a complex and differentiated modern societies 'forced' people to interact with people they do not know nor look like themselves. Likewise are ideas that education affects social cohesion on a societal level not new (Green and Preston 2001), evident in the continued political attention on issues related to integration through education, or the idea that the common schools work as a 'integration machine' that can – partly, at least – explain why second generation immigrants are better integrated than their parents.

Still, these questions seems increasingly important to bring back into focus in times with high distrust in 'the others' – the immigrants, or *the outgroup* – and particularly the so-called 'Muslim immigrants' across political lines (MandagMorgen 2019b, 2019a). Not even the youngest adults (18+) have become significantly more 'positive' in their assessment of the *consequences* of immigration (from 2003 to 2013); a high proportion still believe that immigration leads to increasing crime rates and there is general consensus that parallel societies are undesirable for society (Albrekt Larsen 2016). Though, the young generations is more positive in the assessment of immigrants potential of 'becoming Danish.' A sentiment that largely remain among the young generations as they get older. Nevertheless, it is hard not to some degree to interpret this as a monocultural – assimilatory – understanding of integration. Moreover, there exists a pronounced generation-gap in sentiments towards immigration. Albrekt Larsen (2016) calls attention to *generation multiethnic* – a generation born and raised in a homogeneous society – in understanding changing sentiments to multicultural issues. Thus, the explanation to the more positive sentiments and higher rates of interethnic friendships among the young cohort can either be that *generation multiethnic* simply cannot imagine a mono-cultural world and by carrying such a multicultural world-view

they have become 'color-blind' in their friendship formation and world view. Or, alternatively, because these people has had intense contact with people of other ethnicities (the outgroup) within the welfare state's institutions – most notably kindergarten and primary and lower secondary schools. A contact which assumingly has reduced negative stereotypes and stigma, and hence reduced boundaries of interethnic associations (Albrekt Larsen 2016). In other words, *generation multiethnic* is living in a society with a different *opportunity structure for outgroup friendship formation*, than the generations who precedes them.

In explaining how this intergroup contact and changing social (opportunity) structures of society affects social relations, cognitive approaches has become a dominant theoretical perspective (Katz 1991). Thomas Pettigrew has over a body of work shown how contact affects contemporary intergroup relations and prejudice based on the seminal and still influential book, *The Nature of Prejudice*, by Gordon Allport (1954). Allport believed that ethnic antagonisms and ethnic homopholy were driven primarily by prejudice; a prejudice which was '*a product of the fears of the imagination*' (Allport 1954, *xv* cited in: Katz 1991). Oppositely, he remarked how ingroup formation is when the familiar becomes a value in itself: '*We come to like the style of cooking, the customs, the people, we have grown up with*' (Allport 1954, 29). In the process of ingroup formation and resulting formation of outgroup prejudice, Allport placed a special emphasis on the child:

> *A child's parents, neighborhood, region, nation are given to him – so too his religion, race, and social traditions. To him all these affiliations are taken for granted. Since he is part of them, and they are part of him, they are* good. (Allport 1954, 29)

Therefore, *in every society on earth the child is regarded as a member of his parents' groups* (Allport 1954, 31). An observation most crudely examplyfied with the notion of *second generation* immigrants. Persons who are born into a society different from the society their parents were born in and have attended the same institutions as '*the ingroup*', yet they remain defined by the status of their parents. In other words, despite different *achieved* statuses, people are still being defined by their *ascribed* status. Nevertheless, Allport did not consider discriminatory behavior towards outgroups as a deep conviction in the individual. Rather, discrimination is a matter of conforming to social customs and situational demands (Katz 1991) – and thus discriminatory behavior is not necessarily 'a static default' in the individual, but is difficult to change. Conceptualized as *social distance*, Allport showed how some groups are more attractive as neighbors, friends, and kin. (In the 1950's United States of America those groups were – by Allport's examples – Englishmen and Canadians, while the 'unattractive' groups were Hindus, Turks, and Afro Americans.) Allport noted how these view of outgroups, despite minor shifts, remains substantially constant – a prediction which immediately seems correct in contemporary society, given the decades long debates on the consequences of immigration. Defining for his work, Allport were overtly pessimistic on the

future of interethnic relations. Noting that

> *It required years of labor and billions of dollars to gain the secret of the atom. It will take a still greater investment to gain the secret of man's irrational nature. It is easier* [...] *to smash an atom than a prejudice* (Allport 1954, *xvii* cited in: Katz 1991)

Allport was critical of the anti-immigration laws of his time and steadfastly argued that to begin favorable changes in ethnic relation (in the U.S.[1]) it need to start through state laws and Federal executive orders against discrimination. Actions which would bring different groups into daily contact on an equal-status basis (Katz 1991). He formulated a hypothesis on how this daily intergroup contact would reduce prejudice – a hypothesis which has attained awe aspiring status due to its continued theoretical and policy importance (Pettigrew 1998). Allport specified four conditions for 'optimal' contact (i.e., contact that reduces prejudice): 1) equal group status within the situation; 2) common goals; 3) intergroup cooperation and; 4) authority support. Pettigrew's contribution to the theory is – among other things – the addition of a fifth condition: The contact situation must have '*friendship potential*'[2] (Pettigrew 1998). As Pettigrew (1998) remark, there is a link back to Durkheim's work on functional differentiation in understanding how intergroup contact – optimal or not – is made possible in the first place:

> *Durkheim* [...] *pointed out that similarity (mechanical solidarity) is only one form of social bond. Society could not exist without bonds across reciprocal roles – parents and children, clerks and customers. So differences (organic solidarity) also are important for social bonds. These differences, widespread in modern society, guarantee that contact takes place between dissimilar people. Further, under some conditions, optimal contact leads to positive changes that generalize even when atypical members are involved.* (Pettigrew 1998, 74)

In line with Allport's contact theory, Albrekt Larsen also noted that an obvious interpretation for the generational shift in sentiment is the contact effects realized through intense interethnic contact between Danish children and fully integrated immigrant in particularly

1. The U.S. is very different from Denmark, politically and demographically, and comparisons are therefore misguided in many cases. Yet, the experience from an 'immigrant nation' can be meaningful in understanding what processes might come to matter in nations with little prior experience of immigration rates in the contemporary magnitude.

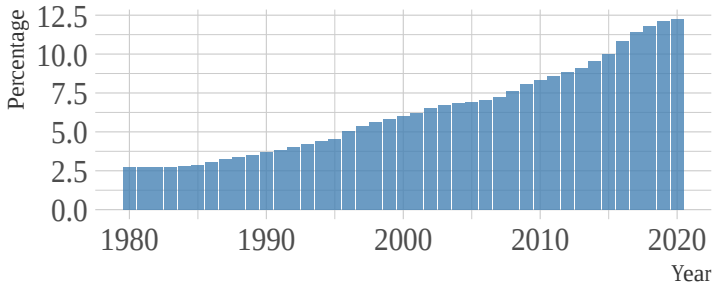
2. Important to note, Pettigrew (1998) also notes that many studies find intergroup contact to usually have a positive effect even in situation *not* conforming to all of Allport's conditions. Yet, positive outcomes is a purely descriptive notion (people with intergroup contact *generally* have lower prejudice towards the outgroup) and Pettigrew has been more interested in why this is the case. He point to four processes of change through intergroup contact: 1) *Learning about the outgroup*; 2) *Changing behavior*; 3) *Generating affective ties*; 4) *Ingroup reappraisal* (see Pettigrew 1998, 70-73).

the educational system. Hence, a hypothesis is that emotions of intergroup anxiety or outright hostility can – partly, at least – be traced back to a lack of prior experience with the outgroup. A relevant empirical finding noted by Pettigrew is that

> *Black and white high school students who had the most favorable earlier interracial experience were more positive toward the other race* [...]. *Thus, intergroup contact and its effects are cumulative – we live what we learn.* (Pettigrew 1998, 78)

In other words, in the long-term perspective it becomes diffucult – if not impossible – to ensure the trust and tolerance between groups in society if people live their whole life without (meaningful) contact to people who do not look like themselves (Klitgaard, Nørgaard, and Petersen 2006). Exactly the Danish educational system should present a best case of a space for such (principally) positive – and *optimal*, in Allport's terminology – contact because there are no tracking during the first 10 years of schooling (0^{th}-9^{th} grade) and despite extensive (but not unlimited) free school choice, private schools are heavily subsidized by the state covering around 75% of the annual cost. Importantly, these factors exists in combination with an increasing immigrant population. In 1980 $\approx$ 2.5% of the population makeup were immigrant, while this proportion in 2020 was $\approx$ 12% – hence a 10 percent-point increase over 40 years (see figure 1.1).

Figure 1.1: Percentage immigrant of the total Danish population



Source: Own figure, based on data available at Statistikbanken [www.statistikbanken.dk].

The structural conditions of primary and lower secondary school creates a basis for children of different ethnicity and social class to attend school together; or in Allport terms, the Danish school has a great potential of bringing people, otherwise separated by great social distances, together. School can even be the first multiethnic setting children encounter in their lifecourse. The children are not just in proximity, but are obliged to coorporate or

interact in some minimum capacity during the school-day, making the contact non-superficial in a long-term perspective and potentially obliterates constraint of physical seperation.

On the case of immigrants and intergroup contact, the most important aspect of the Danish school is the departmental notice of November 30$^{\text{th}}$ 1970 – *Cirkulære om undervisning i folkeskolen af udenlandske børn* – it was noted that 'foreign children' was to attend public school in Denmark if they were staying for more than six months; even if their stay were temporary. Thus, the *compulsory education* manifested by Danish law, extended to immigrant children arriving in the 1970's. The departmental notice was replaced in 1976 with the ministerial order, which among other things manifests the right to mother-tongue education if there is at least 12 pupils at a school (or in the municipality) speaking a given language other than Danish, with a stated aim of ensuring the children did not lose attachment to the origin country, to ease the return to the respective origin country (Buchardt 2016). Yet, native-tongue education was phased out in 2002. Likewise is the first integration law of 1998 important. The law placed the responsibility of the 'integration task' at the municipality level and created a 'state controlled' distribution of newly arriving refugees, so that the municipalities wich historically has had the smallest refugee population would receive relatively more refugees; hence, ensuring a more even distribution of refugees between municipalities.

As Durkheim noted more than a century ago, in modern institutionalized education – not defined by tracking – people who do not look like each other, socially or literally, are 'forced' together in a space in which they engage on equal status, *all things equal*. Such intergroup contact is not a given phenomenon in itself, though. Residential segregation and increase of private alternatives in combination with free school choice can make the potential of extensive intergroup contact unrealized. Thus, it remains an empirical question whether extensive intergroup contact is realized, contemporary and historically, and it also remains an unanswered question whether the contact hypothesis offers a reasonable explanation in changing sentiment and higher degrees of intergroup friendships or marriages. It is this view of structurally conditioned intergroup differences in contact I take in present report. Yet, this is not a study of actual observed intergroup contact, nor is it a study of whether intense contact in the educationally system leads to observable changing sentiments. Instead, it is more particularly a descriptive study of the *potential* for social integration on the basis of intergroup contact in one domain of society – the lower secondary school – guided by Peter M. Blau's macrosociological theory. Blau's theory is a relevant supplement to understand the structural determinants for the realization of the assumptions of contact theory as outlined above. Blau's work starts on the premise that social interaction has value for people (Scott and Calhoun 2004) but showed how intergroup associations – as with all types of relations – depend of opportunities for social contact (cf. section 3.3.1) by extending on the otherwise simple notion that the more pronounced the heterogeneity, understood as the size and number of groups in society, the greater are the chances that people's casual encounters involve members of

different groups (Blau 1974), explicitly guided by his insistence that it is sociology's objective to analyze social structures influence on social life. Though we might think that 'of course' do size matter, it has yet to be empirically tested and it is not given that size matter due to the interaction of more complex social processes and structural consolidation of group inequalities. In sum, as Blau, I am interested in *the minimal potential of intergroup exposure* given the structural constraint imposed on the individual and the group. Therefore, I ask the following research question:

> ***To what extend have native and immigrant children been exposed to each other in Danish lower secondary schools in the years 1985-2019?***

Expressed differently, the aim of present report is to provide a description of structural opportunities for intergroup contact for the 14-15(16) year old children in Denmark in the compulsory[3] institutional setting that is the lower secondary school and how these opportunities has changed over time. Therefore, *minimal potential exposure* is an expression of how many outgroup members a child is expected to randomly encounted within the school – all things equal. An exposure which then translate to *contact opportunities*, i.e., the potential within the respective school to have actual productive contact with outgroup members. To be sure, systematic group differences is a two-way process. We should be sensitive to not reproduce the tendency to think of issues of integration as if the problems are stemming from *immigrant children* not having native friends (Vertelyté in: Folkeskolen (2020)); it is just as much the other way around.

Should one ask the average Dane the question of whether some groups have monopolized certain schools, she would answer, I imagine, that it is nonsense and stress how there is free school choice in Denmark and anyone is free to choose whatever school they like. Why this answer might be misguided is because one tend to think in extremes in dilemmas of segregation. A recent analysis from the ROCKWOOL Foundation (2020) has shown how children from the best socio-economic backgrounds attend the 'highest quality'[4] public schools and children with parents of low socio-economic status attend public schools of the 'lowest quality'. Concluding that the children with the best preconditions for development in the public school also get the best conditions to do so. This, I argue, is evidence of

3. For the sake of transparency, it should be not that, strickly speaking, while primary education is compulsory in Denmark, homeschooling is allowed by law. Yet, a report from Rambøll has reported that on average (for the school year 2014/15) on average 5 children (6-15 years old) in each municipality is being homeschooled. While 279 children is not registered to attend any kind of schooling as of Feburary of 2018 (Folkeskolen 2018). Therefore, throughout the report I treat the population as if *all* attend institutionalized education with the knowledge that very few do not.

4. *Quality* is conceptualized as the average characteristic of the teachers at the individual schools and how well this average measure predicts test scores on the standardized national tests. On the characteristics of the children, the average number of years education of the parents for the individual schools is calculated. There is found a strong correlation between the average teacher and child characteristics.

group inequalities in the domain of education delineated by socio-economic groups. Yet, the assumption of the report is that the explanation of this phenomena of social closure around 'the best' schools is not – principally – explained in terms of microsociology and psychology. Instead it should be answered in macrostructural terms. Meaning that families inadvertently and unconsciously set up these organizations of social closure reducing intergroup contact[5]. The aim of present report is thus to describe the structurally defined potential of exposure to ethnic diversity of native and immigrant children within institutionalized education. The report will empirically describe the realization of the *minimum potential contact*[6] in the Danish school which is assumed to be – all things equal – a best case social situation and institutional setting of intergroup contact.

1.1 Integration and the school

All nation states have schools and all modern states have monopolized education and its curriculum. Much research has been qualitative in nature, focusing on the content of education (i.e., the curriculum) in questions of the social integration of immigrants (Oder 2005) (see Fernández and Jensen (2017) for a Scandinavian example). Such research – often guided by social contract theory – has produced ambiguous results in terms of answering whether state schools has been successful in fostering social cohesion (Heyneman 2003). In a *contact theory* perspective, the argument is that a social and ethnic heterogeneous school is important to a coherent society (Musset 2012), grounded in argument of the negative social consequences found among children experiencing an absence of intergroup contact in their formative years (Johnston et al. 2017). Moreover, researchers has found that heterogeneous schools have a positive psychological effect on the children who attended these schools, such as less prejudice and reduced stereotypical reactions towards the outgroup (Reay and Lucey 2003), echoing Allport's hypothesis and Pettigrew's results. Relatedly, lack of interethnic contact in schools has been related to negative interethnic attitudes in especially the native population (Ledwith 2017). Therefore, I favor a conceptualization of social integration close to that of Durkheim presented over a century ago; integration as actual intergroup contact and thus integration as a mutual *process* in society, rather than conceptualization of the concept found in monocultural assimilation and social contract theory. A process of integration which is expected to change both parties.

5. As Tilly (1999), I do not mean overestimate the 'absoluteness' in structural boundaries in social space. He expressed this view best by saying: '[A]*t a scale larger than a single organization completely bounded categories are rare and difficult to maintain, that most categorical inequality relies on establishment of a partial frontier and defined social relations across that frontier, with much less control in regions distant from the frontier*'.

6. The distinction of exposure and contact is that exposure is being in proximity (e.g. *seeing* each other), while contact is exposure being transformed to some more or less intimate relation ranging from having a conversation to being partners.

Relevant to the integration perspective is the many references references to empirical studies made in a context of institutionalized education conceptualized as a space for intense and long-term intergroup contact made by Pettigrew (1998) throughout his theoretical work. For example, American studies has found that black graduates from segregated high schools were significantly less likely to later work with white graduates; hence explaining why black graduates of heterogeneous schools do better later in life (Pettigrew 1998). Also, as far back as 1966 field experiments found that short term intergroup contact is not 'sufficient' to produce positive individual and societal results, but

> *Once we adopt a long-term perspective that allows cross-group friendship to develop and the full decategorization, salient categorization, and recategorization sequence to unfold, we can expect striking results. Such a revised perspective explains why extended intergroup contact often has more positive results than either the contact hypothesis or cognitive analyses predict.* (Pettigrew 1998, 76)

As a concluding note, it should be stressed that the overarching argument is *not* that the school is the institution in which all matters of social integration and cohesion can (or should) be explained or solved. As Heyneman (2000), I consider the school one 'pillar' among a set of 'societal pillars' in the form of either institutions and civil society that each makes their own contribution toward a coherent society.

1.2 Previous research

The Council of Europe (2017) has noted that school segregation remains a problem in all EU member states. This is therefore not the first study to describe the distribution of natives and immigrants in the Danish school landscape. Nevertheless, it is original in its scope of available data; covering a longer time period and the whole population. Moreover, previous studies have tended to take on a particular *segregation* perspective and not treating *exposure* as a particular phenomenon. Though the results, more often than not, are strongly correlated, it is an important distinction. Segregation research is mostly interested in distributions of populations among a set of subunits and the process behind a given distribution in the landscape, and rely on a set of more or less advanced index measures in the analysis. Whereas this particular exposure study is cast in terms of probabilities (i.e., opportunities) of intergroup contact and are therefore more particularly sociological in its interpretation.

Considering the amount of international literature there is relatively few quantitative Danish studies of school segregation. The earliest Danish study were made by Rangvid (2007) based on micro-level data for the full sample of pupils in the Copenhagen area for the year 2003. She concludes that residential segregation do not explain the full extent of school segregation – in other words arguing that the ethnic composition of a school's catchment area/district cannot account for the school's ethnic composition. Thus presenting

an argument that school segregation is a phenomenon in itself, not solely tied to residential segregation. Later, Rangvid (2010) extended her analysis on the same data to focus on *native (white) flight*, finding a tipping point at 35% immigrant children at the local and assigned public school from which there is observed an increased probability of native parent opting out of the assigned school and choosing a private alternative. Nielsen & Andersen (2019) revisits Rangvid's (2007) study with updated data. They, on the other hand, argue that school segregation principally is an urban issue because immigrants tends to be clustered in geographical space around the larger cities. The same has been found for many European countries (Brunello and de Paola 2017). The argument is then that this geographical clustering – visually apparent on a daily basis for the locals – is what makes an increasing proportion of Danish families to opt out of the district school and choose a private alternative. On this, Nielsen & Andersen (2019) has made a striking remark on how the Danish welfare state has played a role in indirectly creating the basis for such outcomes:

> [...] *when the ethnic minorities arrived in the 1960s and later, social housing was the only accessible sector for them. As the middle class began to buy rather than rent housing in the same period, the residualisation of social housing began. The middle class and many workers with a majority background moved out of the social housing estates and left an increasingly marginal population behind* [...]. *People who were single, ethnic minorities, retired early and inactive in the labour market became a dominant portion of the tenants in many estates. Thus, segregation at the school level took place despite huge welfare expenditures.* (2019, 3236–7)

Along these remark on the effect of residential segregation on school segregation, it is important to note that, on a national level, ethnic residential segregation has decreased since 1995 (Damm, Schultz-Nielsen, and Tranæs 2008; Andersen 2015). Moreover, Damm, Schultz-Nielsen, and Tranæs (2008) argue that the tendency for immigrants to cluster around particular areas in the city is not explained by their ethnicity; immigrants are simply living in proximity of others with similar socio-economic status.

Christensen & Ladenburg (2012) have investigated the distribution of families based on their socio-economic status between public schools and private alternatives for the school year 2009/10. When looking at ethnicity alone, they find respectively a greater proportion of private schools with none or few pupils from minority families, and a greater proportion with most of the pupils from minority families. Trends, which remain most pronounced in the Copenhagen area. On the matter of free school choice, early evaluation of the consequences of the extended free school choice in 2005 (focused on Copenhagen) concludes that despite a potential of increased ethnic segregation no real change in segregation levels followed immediately after the introduction (measured in 2007), while an updated evaluation in 2011 reconfirmed this (Rambøll 2011). Nevertheless, an accompanying survey among parents of school-aged children found that 28% of the responding parents said they would choose an

alternative to the district school, if the alternative had a lower concentration of immigrant children[7]. Moreover, there is empirical evidence that more school-moves is away from schools with an immigrant proportion over 10% towards schools with less than 10% (Rambøll 2011). In the latest evaluation of the consequences of a more liberal school choice produced by Epinion (2017), the level of segregation is a little higher due to a larger study population but the level of segregation have remained constant from 2005-2015.

While these studies are purely quantitative in nature, Buchardt (2016) has written extensively on the schooling of migrant children in the Danish school system and has given a seminal description of how migration has been a central theme in the school-political pedagogical debates since the 1960's guest worker programs. She remarks that it was particularly during the 1970's that schooling, and the potential related problems, of the immigrant children started to gain attention. Though, the 'problem' was not clearly defined yet (Buchardt 2016, 23); it started as a matter of the children's language but became gradually more and more a matter of their 'culture'. It is also in this decade that educational professionals are starting to be concerned about the migrant children's 'cultural patterns' and the dominant religion of their origin country, and some professionals started to remark that *'our norms and traditions often appear strange to foreigners'* (Odde, 1974 cited in: Buchardt 2016, 42, *own translation*). During the 1980's, in pace with a changing composition of origin countries, 'Islamic culture' started to be the focal of (negative) attention among educational professionals, and increasingly in national politics and mainstream society as well. There is, therefore, a tendency to see the problem being a particular group (the 'Muslim immigrants'), that tend to receive most attention in discussions of integration because an *a priori* assumption is that they are 'more difficult' to integrate. Present report refrains from this miopic preconceived notions and focuses just as much on the aviodance behavior in the native population as in the minority population.

7. Strikingly, less than a fourth of the representatively selected parents who responded the survey presents a full knowledge of how the free school choice in practice work (based on questions designed to test their knowledge). Despite this clear lack of knowledge, 79% responded the support the policy. Yet, at the same time, many of those parents also answer that they are concerned of the potential consequences from the policy, such as ethnic and socioeconomic segregation and are critical of parents who make use of the free school choice and condemns their actions as 'school shopping' (Epinion, 2017). The same ambivalens is found among Swedish parents (Malmberg, Andersson, and Bergsten 2014) and Dutch parents (Boterman 2013).

2 | The heterogeneous school and social cohesion at the societal level

> *Schools continue to play a major role in preparing students for life as future citizens. Thus, integrated schooling becomes paramount to life in a nation where many cultures and ethnicities coexist as it is within the context of schools that young people learn to deliberate and collaborate with others that are like and unlike themselves.*
>
> — Valerie Ledwith, State supported segregation?

As laid out in the previous section, the understanding of social cohesion is not one of 'shared moral community' being the fundamental prerequisite, rather it is one stressing *actual (non-negative) contact*. Therefore, the feeling of being part of a national community is not assumed to be a prerequisite for a coherent society. Thus, I do not draw on national conservative ideas stating that to restore or retain harmony in the social fabric of society the 'collective consciousness' most be either restored or strengthened (Albrekt Larsen 2014). Nevertheless, my argument is that the nation state still matter a great deal because the world remains organized in nation states of which borders are being increasingly apparent on different dimensions in contemporary society. Among the many institutions of the nation states, its monopolization of education is a key characteristic. Education of the residents of the nation state has been considered relevant for the local (national) culture and therefore subject to local (national) control (Heyneman 2003). The understanding of public educational institutions in a nation building perspective has been that the role of the institutions is to build and imprint a national identity in the pupils through the reproduction of a common language, a common national history, an understanding of the nations governance, and socialization into the norms of society mirrored in the teacher (Albrekt Larsen 2016). Schools have therefore since the dawn of the nation state been recognized as a key institution to affect and secure social cohesion by either fostering or retarding tolerance and respect for *the others* along imprinting a national identity (Oder 2005).

Stephen P. Heyneman has done extensive work on the relevance of institutionalized education in nation building. In a historic perspective, he writes that since its invention in

the 17th century, public education has been one of the main contributions to social cohesion in the west (Heyneman 2000). Frederick the Great (the 'father' of public education) was the first to articulate a pragmatic rational for public education in the 18th century based on a concern of providing a common public experience across differentiated groups of society and bringing those groups together (Heyneman 1999). Later, in the young nation of the United States, W. S. Datton of New England made a similar comment on the relevance of public education and it necessity for a united country. (This of course did not include the black children of the nation until much later.):

> *The children of this country, of whatever parentage, should not wholly but to a certain extent be educated together – be educated not as Baptists, or Methodists, or Episcopalians, or Presbyterians; not as Roman Catholics or Protestants, still less as foreigners in language or spirit, but as Americans, as made of one blood and citizens of the same free country – educated to be one harmonious people. The common school system, if wisely and liberally conducted, is well fitted in part at least to accomplish this. While it does not profess to give a complete education and allows ample opportunity for instruction and training in denominational peculiarities elsewhere, it yet brings the children of all sects together, gives them, to a limited extent a common like education, and, by such education and* by the commingling, acquaintance, and fellowship which it involves in the early unprejudiced and impressionable periods of life, assimilates and unites them. (Rev. W. S. Datton 1848, 166-168 cited in: Heyneman 2003, *own emphasis*)

Therefore, the simple everyday act of sending a child to school – and making it a requirement by law – was considered a tool to integrate societies and prevent bloodshed between religious groups; as long as schools are not promoting intolerance of outgroups that could potentially lead to social erosion (Oder 2005). As Heyneman (2003) puts it, schools are expected to, through a classroom experience adhering to the citizen principles of society, decrease the 'distance' between social groups. As a note on his position, Heyneman appear a firm believer in social contract theory (cf. Heyneman 2000), believing that social contracts require '*elements of trust among strangers – to the extent that the socialization of citizens of different social origins has allowed them to acknowledge and respect each other*', thus, on this premise, he argues that segregated schools therefore may be contra-productive towards ideals of social cohesion (Heyneman 2003). The problem with a strict interpretation of the contract-perspective[1]

1. On the authorship of Heyneman it is important to note that he, qua his work at the World Bank, has focused extensively on nation-building in new and developing nations. He writes that '*one important purpose of schooling is to prepare students to contribute to a socially cohesive society. A cohesive society is the product of social and human capital. It is one that can withstand exogenous shocks and threats – financial collapse, natural catastrophe – without collapsing into civil or ethnic conflict*' (Heyneman 2011).
Outright ethnic or civil conflict is not an extreme relevant in western societies in which 'social cohesion' is not a matter of the survival of the nation – though the most extreme populists frame it as such.

(or social conservatism) is that it carries a (misguided) idea that the ethos of people can be changed according to a larger plan; an idea there is no evidence to support (Albrekt Larsen 2014). To be sure, I believe in the rationale of public education in the early faces of nation-building, stating that '*the reasons nations invest in public education, have traditionally been the social purpose of schooling. This social purpose originated from the time when the first multiethnic nations were being constructed. The principal task of public schooling, properly organized and delivered, has traditionally been to create harmony within a nation of divergent peoples*' (Heyneman 2000). Yet, I am not in favor of the (unnecessarily) complex explanation which is social contract theory. For example, a sign of high social cohesion in a contract-perspective in the domain of public education is the observation that the behavior of pupils is '*spontaneously and independently abiding by and endorsing the rules*' of society (Oder 2005). Instead, I argue the process is more 'simple' than complex social contracts being formed; *contact* is sufficient to create a basis for intergroup recognition and thus create mutual ties across the social fabric. That no group is being viewed as so 'alien' that intimate intergroup contact (friendship, marriage, etc.) is neither viewed as nor structurally inconceivable, is a sign of social integration from which a society – over time – becomes coherent through friendship and family formation. That people feel a particular 'pride' of the nation and hold a particular view on the norms of conduct (i.e., those 'rules' not formulated as laws) is – albeit not unimportant – secondary.

2.1 Theorizing the social function of state monopolized education

While the historical quotes presented earlier principally is normative or even pragmatic in nature, the school as a mechanism to ensure social cohesion started to gain increasingly theoretical attention in the late 19th and the early 20th century. Green and Preston (2001) has given a comprehensive account of the changing understandings of the societal 'function' of the school. Public education was from its emergence considered a 'tool' in nation building in the late 18th and early 19th century to form and build cohesive national identities (through the reproduction of common language and histories) ensuring loyalty and social order among diverse and distinctive (religious) groups. Throughout the late 19th and 20th century, the political groups – liberals as well as conservatives – continued to view public education (though organized in various distinct ways in different nation states) as a mechanism of social order now focusing more acutely on *classes* and celebrated the schools potential in forging class and ethnic solidarity, nationalism, and political solidarity (herein democratic citizenship) leading to collective improvements. Durkheim was (again) the first to provide systematic theorization on the social function of mass education of the population in terms of social integration. He wrote:

> *Society can only exist if there exists among its members a sufficient degree of homogeneity. Education perpetuates and reinforces this homogeneity by fixing in the child, from the beginning, the essential similarities that collective life demands* (Durkheim, *Education and sociology*, 70 cited in: Green and Preston 2001, 251)

Durkheim's theories has left a visible influence on the ideals of the public school by informing both the political Left and Right on notions of education and social order (Green and Preston 2001). During the 20th century, social democratic traditions in particularly the Nordic countries emphasized the importance of schooling in terms of social solidarity and democratic citizenship, while conservatism placed more emphasis on maintaining the 'organic community' with stable social hierarchies and narrowly conceived notions of national values (Green and Preston 2001).

In the post-World War western societies, education as a tool of nation building became gradually de-emphasized – though not eradicated, evident in the many formulation still in the 'act on primary and lower secondary education' of Denmark, stressing, for example, development of the child as a democratic citizen which has no relation to skill-formation relevant on the labor market. The de-emphasis was in part due to the new awareness of the dangers of nationalistic appropriations and the increasing difficulty in finding fitting and adequate ways to conceptualize national identities in a globalized and culturally pluralistic age. In parallel, education in western societies, became associated with economic development. Likewise, an increasing individualistic view of schooling and educations found expression reflecting the welfare state formation in Europe (Green and Preston 2001) – welfare states which has become an (if not *the*) essential institution in any modern society (Goul Andersen 2012).

The textbook definition of the welfare state is centered on the state's responsibility of securing some basic welfare services for its citizens (Esping-Andersen 1990) – of these services provided for citizens, I, of course, only focus on education and due to limited space principally in relation to what Esping-Andersen labeled 'the Social Democratic Welfare State'. Welfare states are designed to modify impacts of the market on the citizens by guaranteeing a minimum insurence against social risk and provide services (along schooling, examples are health care, pre-school child care, and elder care). The key premise in the social democratic welfare state is that all citizens and residents carries the same social rights and access to the welfare services of equal *highest possible* quality – no matter where in the nation state's territory one is residing and without discrimination on the basis of social position (Klitgaard, Nørgaard, and Petersen 2006). 'Highest possible quality' is central to the social democratic ideal because, though it to a degree accepts certain (modest) levels of economic inequality, it ensures that the majority of citizen are satisfied and feels their needs are covered by the state so that a two-part system does not develop where those with the most means find coverage for services outside of the state's institutions where there is no access for those with the fewest means.

Another striking trend in the social democratic welfare state is the de-familization which shifted attention away from the nuclear family to instead serve the need of the individual. This de-familization makes the social democratic welfare state a '*peculiar fusion of liberalism and socialism*' (Esping-Andersen 1990) by both taking direct responsibility of caring for children and still transfer means directly to the individual in question (i.e., the child), leading to a notably high degree of de-commodifization of the citizens, because this is expected to foster social solidarity: '*All benefit; all are dependent; and all will presumably feel obliged to pay*' (Esping-Andersen 1990). The social democratic ideal is thus that with equal access, '*all of us*' will meet across social circles and social positions in the central institutions of the welfare state (kindergartens, primary schools, higher education, etc.). Research has shown how it is principally in the public schools and earlier child-care institutions children of different social classes meets and attain options and abilities for class mobility. Hence, the assumption is that social segregation in these institution will have widespread and diverse negative consequences.

Situations of a *de facto* two-part system might seems a worst case scenario but many have raised concerns of the development of the social democratic welfare state. It has been recognized that though the Scandinavian welfare state still predominantely is guided by social democratic ideals they are not void of liberal elements (nor have they ever been). One of the best examples of this is the introduction of (increased) free school choice. To be sure, private school alternative have always existed in Denmark but the choice is *in principle* much less restrained than it has been historically. School choice has gradually been made more liberal by consecutive governments since the 1990's (Rangvid 2009); before then, the *district schools* were the default choice of school. These reforms culminated in 2005 with the still debated law on freer school choice. The law manifested that parents were free to choose any public school for their child as long as that school has the capasity to take in more children; in cases of full capacity, the available places are reserved for the parents living in the school's district/catchment area. This is different from before 2005, where schools were allowed to refuse a place for a child based on a pedagogical evaluation and the resources available at the school and in the class. What is more, the Danish voucher system means that private schools are heavily state subsidized, meaning private school is not in principle reserved for the particularly well-off families (Gerdes 2013). A funding available for schools no matter the ideological, religious, or pedagogical foundation of the school (Barsø 2010a, 2010b). In 2010, the public financing per pupil was 43.800 dkk. per year. Meaning that the 25% of this cost — around 14.500 dkk. (per year) — is possible to cover by a large proportion of Danish households, yet completely unavailable for the lowest income households. In line with this, what some observers have remarked is that a more differentiated demand is taking place within the welfare state institutions (Klitgaard, Nørgaard, and Petersen 2006). In the educational system this is expressed as a higher demand of private alternatives to the public school which better suits the demand of the parents. From 1970 to 1999 the market share of private schools were doubled (Klitgaard, Nørgaard, and Petersen 2006), yet 90% of all

children in Denmark still attended a local public school (Nielsen and Andersen 2019). The market share of private schools has increased rather rapidly in pace with school choice being gradually made more liberal by consecutive government. Looking at the most resent data from the Institution Register (cf. sec. 4.1), 76.6% attended a public school in 2019. In a social democratic perspective, this becomes a problem if a differentiation happens so that the wealthy chooses private alternative and the poor rely on public alternatives (Esping-Andersen 1990). In other words, it becomes a problem if one's choice affects other welfare and life chances; which is the case if systematic group differences in school outcomes (understood as contact opportunities) is being produced by some groups increasingly choosing private alternatives. Something that easily can happen even though the members of these groups individually favor social integration and are progressive in their mindset. A famous quote by Schelling states: *How well each does for himself in adapting to his social environment is not the same thing as how satisfactory a social environment they collectively create for themselves* (Schelling 1978). Nevertheless, free school choice remain highly politizied, internationally as well as in Denmark. Proponents arguing that free school choice will improve the access for minority children to 'high quality' schools that otherwise would not be accessible. On the other hand, opponents criticizes the policy for being unlikely to benefit minority children due to complex social processes of choice and the relation between residential and school segregation (Musset 2012; Reay and Lucey 2003).

3 | A theory of opportunity structures

> *The multiple roles and group affiliations in complex social structures weaken the hold of ingroup bonds and alter the form of social integration. People have wider circles of less intimate associates than in simple societies.*
>
> — Peter M. Blau, Inequality and Heterogeneity

Peter M. Blau has produced a large body of theoretical and empirical work centered around questions of intergroup associations and social integration. A theory that has been hailed as a '*theoretical masterpiece*' and as '*one of the most important theoretical works ever written in sociology*' (see Sampson 1984, 1), but has also been criticized for its deterministic structuralism. Moreover, to my knowledge, Blau has only had a marginal position in Danish research. Since Blau did not produce work specifically concerned with the school as a space for crosscutting of social circles, nor did he as Allport place special emphasis on the child (due mostly, I believe, to the fact he unacknowledged principally considered the integration of 'adults' somewhat staticly). I will therefore in present section trace the key ideas presented throughout his theoretical endeavor and relate it to the context of institutionalized education. (I will not trace his work chronologically though, since this is not meant as an academic biography. For such, I recommend Scott and Calhoun's (2004) memoir.) Before going into the details of Blau's macrostructural theory, I will first present the classic sociological ideas on social structures and integration that has been defining for his work. Ideas which are important to appreciate his contribution to the study of social integration at the societal level.

3.1 Social integration in a differentiated society

Émile Durkheim was the first to formulate ideas on system integration in complex and differentiated social systems, but he did so in a functionalistic, evolutionary, and causal way of reasoning. Moreover, he never clearly and explicitly defined what he meant by 'integration' and this notion has therefore been interpreted as varying conceptualizations such as '*shared beliefs, social interaction, social relationships, social organization, feelings of cohesiveness, and the vitality of society*' (Beck 2006, 62). Also problematic is the confusion

over the relative and independent roles of integration and regulation in his theory, with some researchers argueing there is no difference between the two (Pescosolido and Georgianna 1989, 34). Nevertheless, his influence on social research remains due to his seminal conceptualization of social structure and solidarity as a *social fact* and as an underlying principle for social life and inherently an extra-individual reality (Rytina et al. 1988). In his own words:

> *Association itself is* [...] *an active factor productive of special effects. In itself it is therefore something new. When the consciousness of individuals, instead of remaining isolated, becomes grouped and combined, something in the world has been altered.* (originally from Durkheim's *Suicide* (1897), quoted in Blau 1964)

In the work of Durkheim, social integration – or, *solidarity*[1] – is defined in reference to what he considered poor integration: anomie, egoism, lack of coordination, and the forced division of labor (see Turner 1981 for definitions). For example, separation (between groups) and high rates of divorce and/or suicide are indicators of anomie (Blau and Blau 1982). Durkheim thus accepted a duality of structure and the function of the system; a function in a differentiated system which served to integrate and unite society's 'organisms' seen through a lens of functional interdependence between societal segments (Martin and Lee 2015).

Another relevant contribution from Durkheim's macrostructuralism was his formulation of the idea of *moral density*, stating that increasing contact and interaction among people will take place in increasingly differentiated and complex societies. In *The Division of Labor* from 1893, Durkheim identified two conditions for the social differentiation; (increasing) population size and ecological concentration. In other words, population size and concentration increases 'competition', resulting in both specialization and differentiation and increasing 'density' of contact among actors in ecological space (Turner 1981). In this view, social integration is essentially about relations between people in social space.

3.2 The significance of numbers for social life

Despite providing a sound foundation for a structural analysis, Durkheim's theory of social differentiation is not sufficient for a contemporary analysis of integration given the insistence on functionalist explanations and his too unclear definitions of what he meant by integration (Beck 2006). Another classic in modern sociology, Georg Simmel, offers a more simple explanation on social relations in complex societies. Simmel, who also saw society as fundamentally about relations among persons, extended on the structuralism

1. Durkheim differentiated between two forms of solidarity. *Mechanical solidarity* based on individuals' similarities, and *organic solidarity* based on individuals' interdependence in a society marked by division of labor (Martin and Lee 2015). He rejected the idea that a shared moral standard could bind a society together. Instead, it was the new form of organic solidarity and following interdependence that would keep a society from disintegrating by the members of society being dependent of each other – as the organs of a functioning body (Albrekt Larsen 2014).

of Durkheim (Martin and Lee 2015), yet he did not place emphasis on function in the social system. In a sense, Simmel 'quantified' Durkheim's idea of 'moral density' in his writing on *the significance of numbers for social life* (Simmel 1950, 87). His key insight was formulating a geometric analogy of social space and reflected (i.e., not empirically tested) on how the cross-cutting of social circles (*Die Krezung sozialer Kreise*) are characterizing complex and concentric/dense societies (Blau 1993a). The central argument was that the mere number of individuals of particular social role(s) influences the patters of interactions among individuals, and hence influences forms of social life. New patterns of interaction can therefore emerge under particular numeric conditions (Martin and Lee 2015). On numeric conditions, Simmel also noted that social experiences in the form of associations with persons different than oneself will affect attitudes and conduct of both parties – and potentially '*broaden people's horizons, promote tolerance, and stimulate intellectual endavors*' (Blau 1977a, 36). Ideas which are obviously echoed in Allport's later work on contact theory. Thus, Simmel offered a reformulation of Durkheim's social differentiation, without emphasis on functional explanations. Instead cross-cutting circles should be understood as *'affiliations with groups whose memberships are not identical but partly overlapping, such as the gender, occupational, and ethnic affiliation of a woman lawyer of Italian descent'* (Blau 1993a, 201). This reflects the lasting theoretical insight across Simmel's body of work; in societies or communities with a complex social structure, it follows that multiple group affiliations will be intersecting across (social) boundaries (Blau, Beeker, and Fitzpatrick 1984). Unless pronounced covariation between affiliation and attributes consolidates inequalities (such as the ascription of certain ethnic affiliations deeming the individual to be considered as 'one of the others') (Blau and Blau 1982) – a notion which can be read as a formalized notion of Tilly's (1999) group inequalities.

An interesting, less optimistic, point of view related to the significance of numbers in social life is Louis Wirth's *Urbanism as a Way of Life* (1938). His work is relevant because it can be seen as a prelude to the theory developed by Blau some decades later – albeit Wirth is fundamentally pessimistic towards *density* (in population terms), whereas Blau, as Simmel were before him, is fundamentally optimistic in terms of it effects on social integration[2]. His key observation is how physical distance has decreased in pace with an increase social distance (i.e., differentiation of a previously homogeneous population). Wirth noted how urbanism[3], defined as dense populations in space compromising heterogeneous groups of people, has changed the nature of social relations. Today, relations can be defined in terms of close physical contact and distant social relations. Echoing part of the point Blau proposes

2. Though Blau explicitly confronted his focus on 'positive' relations and extended his theory to also explain 'negative' relations and its potential of conflict (Blau 1977b; Blau and Blau 1982).

3. Wirth did not see 'urbanism' as a way of life exclusively related to 'The City', given the mobility of modern life, and thus formulated the effect urbanism has on social life on a basis on the spaces of the *day population* (i.e., interest is where people work, not where they live).

later on the basis of Simmel's idea of cross-cutting social circles, albeit Wirth writes with an emphasis on negative facets of increasing heterogeneity. In his theory of urbanism, he is essentially dealing with the same problems as Blau was; discovering how relationships, size of populations, density of settlement, and degree of heterogeneity influences social life. Like Durkheim before him, Wirth argues that increasing numbers (of people) involves a changed character of the social relationships between people. Having been characterized as primary contact in simple societies, interaction is now largely defined by secondary contact in complex societies. Meaning that even when contact still is face-to-face, *'they are nevertheless impersonal, superficial, transitory, and segmental'* (Wirth 1938, 12). Wirth also noted how a major characteristic of 'the urban dweller' is his or hers dissimilarity from her fellows, when considering the main lines of differentiation such as age, sex, and ethnic origin. Thus capturing the essence of the 'effect' of numbers and heterogeneity on social life; no single group can conjure the undivided allegiance of a single individual because *'by virtue of his different interests arising out of different aspects of social life, the individual acquires membership in widely divergent groups, each of which functions only with reference to a single segment of his personality'* (Wirth 1938, 16). Wirth problematize this by remarking how th density of people results in no – or lower – sentiment and emotional bonds (i.e., weak ties) between people in complex societies, which introduces the potential of anomie[4]. Interpreting Durkheim's notion of integration as the *quality* of social relationship, Wirth critique is sound. However, if the 'strength' (i.e., importance) of weak ties (Granovetter 1973) is considered the assumption of the effect of denser but less intimate population is opposite in its interpretation. As laid out earlier, the assumption taken in present report is that it is not likemindedness nor intimacy which are the primary drivers of social integration but (non-negative) exposure to differentness driving a process of increasing mutual tolerance.

3.3 Blau's macrosociological theory of social relations

In his theoretical work, Blau attempted to formulate a deductive and logically derived theory able to explain distinctive patterns of associations between people within and between different groups. This is done on the backdrop of an explicit assumption that structurally differentiated positions in society exerts a significant influence on the patterns of associations; notably in terms of the frequency of intergroup association, which Blau saw as key to integrate various segments of society (Blau 1977b). He highlighted many times that his aim was to explain variations in the structural features of society, not variations in the behavior of individuals (Blau 1974). Blau (1977b) therefore echoes the fundamental structural ideas of integration as intergroup relations in his ahistoric, non-functionalistic (as opposite to Durkheim (Turner 1981)) and large scale macrosociological (as opposite to Simmel's small group focus (Simmel

4. Understood by Wirth as *'a spirit of competition, aggrandizement, and mutual exploitation'*.

1950; Blau 1977a; Blau and Schwartz 1984)) theoretically endeavor.

Guided by the theories of society formulated by classics in sociology such as Durkheim, Marx, and Weber, in which the objective of sociology first and foremost was about *relationships* between people in society, Blau, grounded in empirical data, formulated a testable theory of 'the middle-range'[5] (Scott and Calhoun 2004). The underlying premise for his theoretical work was the observation that people tend to associate (more) with people closer to themselves in social space, than with people more distant from themselves in social space[6]. In other words, people are essentially homophiles in terms of whom they choose to associate with in social life. At the same time, it is also assumed that people will prefer outgroup association to no associations. However, it is not homophily in a strict manner of preference and prejudice, but a homophily initiated as a facet of structural opportunities for intergroup associations. Therefore, structure 'creates' specifiable conditioned boundaries (illiterately understood) which determines the *likelihood* of intergroup relations in non-deterministic terms, based on the simple notion that people prefer ingroup associations (Blau 1977a). In studying these structures Blau imposed the otherwise simple question: *how* does size matter?[7]^ Much can be derived from the observation that if the '*difference in group size are very great, most members of the majority have no social contact with the minority*' (Blau 1977a, 35). Oppositely, when the minority group (the outgroup) is small, there is a high likelihood of contact with majority members (the ingroup). Thus, the minority group has a large opportunity pool of outgroup association, while the majority has a small opportunity pool simply because there is not enough minority members in the populations to make it possible for all majority members to have an outgroup associate (unless minorities have drastically more associations than the majority, of course).

Consider figure 3.1, representing a hypothetical population of 12 minority members and 88 majority members (the proportion natives and 'non-natives' in Denmark). For simplicity, only one association (e.g. best friend or marriage) for intergroups is permitted. In this example $\approx$ 58% (7 persons) minority members has an intergroup association, while only $\approx$ 8% (7 persons) in the majority have an intergroup association. It is this logical observation that is at the core of structural barriers; in some cases, the ingroup does not have 'the opportunity' to associate with the outgroup on a large scale. Though, if the relative difference between the two groups decreases, the likelihood of intergroup associations might, paradoxically, not increase

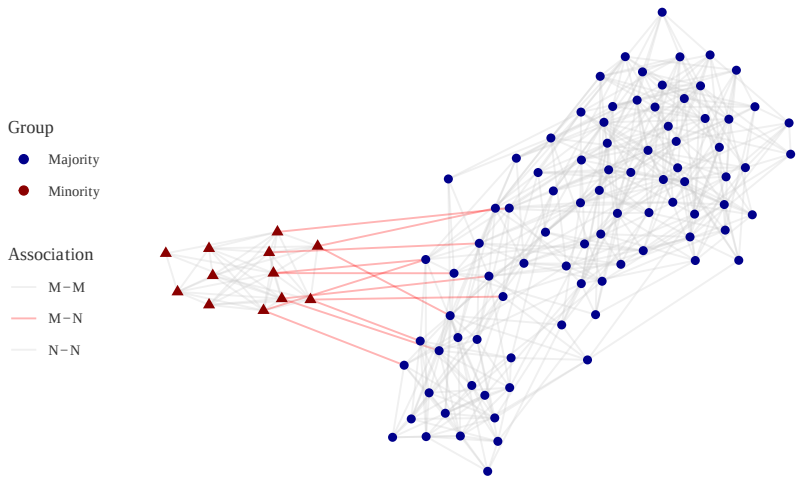
5. The term, theories of the middle-range, is ascribed to Robert K. Merton, who also declared Blau's theoretical work as such. It refers to theories which are related to empirical research (i.e., testable) and simultaneously guided by (and corrected) through empirical research.

6. Drawing on Simmel's geometric analogies of the social world as social *space*, this observation is exactly Tobler's famous **first law of geography**: *'everything is related to everything else, but near things are more related than distant things'* (Tobler 1970).

7. Though Blau's originality does not lay in this simple question of how size matters (nor those he claim it to). Aristotle asked this question in *Politics*, reflecting on what the 'optimal' size of the state was, so that the citizens place in society and role did not become threatened by social disorder.

however, but actually decrease because the outgroup becomes 'socially self-sustaining' and do not have to rely on intergroup contact to operate in society. In a school setting this can be translated to an expected observation: If there only is a small minority group (in absolute numbers) we would not expect them to be able to be isolated, because they in some form or another have to interact with the majority group. On the other hand, we would only expect a small proportion of the majority group to have had contact or relations with the minority members due to the difference in sizes between the groups. On the other hand, if the minority group get large enough, they can, in principle, be able to isolate themselves at the schools if the school take no particular action to distribute them among classes. Hence, the assumption is that there exist some – not too deterministic – optimal distribution for contact at the school level; a distribution that is yet to be confirmed emperically, though.

Figure 3.1: Hypothetical network of associations between a minority and a majority



Source: own figure.

In a deductive theoretic endeavor, Blau formulated his theory over a number of theorems and axioms, of which there are too many to present here, but the central one in this report is the assumption that '*intergroup relations, like all associations between people, depend on opportunities for social contacts*'[8] (Blau 1977b). The more general assumptions carrying the theory presented over his less extensive works (measured in deductively derived propositions) are: 1) social proximity promotes social associations; 2) social associations depend on opportunities for contacts; and 3) the influences of parameters are partly additive (Blau

8. Axiom **A-9** in Blau (1977b)

1977a). Propositions all realized in a heterogeneous school. It follows that the theorems are only deterministic for groups[9], while they in the case of individuals are probabilistic (Blau 1977b). These assumptions thus partly echo the central ideas of moral density Durkheim laid out over a century ago, stating that increasing contact and interaction in complex societies depend on population size and ecological concentration.

The hypotheses of how intergroup relations and life chances are structurally determined is derived from the key ideas of social structure taking form as the size distribution of the population along various lines (Blau and Blau 1982, 9). Three concepts are central in this distribution: *Heterogeneity*, referring to the distribution of people along nominal parameters that can be understood as horizontal inequality. *Inequality*, referring to the status distribution along graduate parameters that can be understood as vertical inequality. And finally, the extent of *covariance* between two or more dimensions, consolidating status distinction (Blau and Blau 1982). For example, the negative correlation between ethnicity (or citizen status) and income and education. These parameters and their consolidation delineates *social positions* in social space. Positions which distinguishes people and people themselves take into account in their social life as a criteria for making distinctions in the social interactions (Blau and Schwartz 1984). Deduced from the assumption of homophily – that people prefer association with people most alike themselves in terms of the intersection of horizontal and vertical *relative* inequality – heterogeneity and inequality will then create boundaries to social association. Though, importantly, these boundaries should not be understood as absolute. Rather, they expresses the likelihood of association, as mentioned earlier. While this is typically understood as distribution within or between *nations*, the objective here is to measure heterogeneity and inequality based on the children's ethnic group and the parents socio-economic characteristics *among* schools.

In table 3.1, common examples of parameters are presented. Nominal parameters engenders heterogeneity by dividing people into subgroups based on their given attribute. For example, if ethnic affiliation constitutes ethnic subgroups in which respective members have more contact with each other than with people in other ethnic subgroups, ethnicity is a structural parameter. A nominal parameter's degree of heterogeneity then depends on numbers of subgroups the population can be divided into and on the distribution of the population among these subgroups (see sec. 4.2). Hence, the greater the number of ethnic groups in a nation, community, neighborhood, school, or any other relevant unit of measurement, the greater the ethnic heterogeneity of said space. Operationally, the measure of heterogeneity should be interpreted as the chance of two randomly selected individuals in the population 'belongs' (categorically speaking) to the same group. It therefore follows that with increasing heterogeneity comes increasing likelihood of intergroup relations. Migration, then, becomes an exogenous condition changing heterogeneity and fertility rates is an

9. Groups are defined broadly as all people sharing (a set of) attributes. These people need not have any relationship.

indigenous condition.

Graduate parameters is on the other hand conceptualized as status distance (Blau 1974) or unequal concentration of status resources (Blau 1977a). For example the perceived – and commonly recognized – status held in either high income or high education and to what degree these resources are concentrated in certain communities (or other spaces, such as schools) (Blau 1974). Exemplified, do most children of parents with high incomes attend particular schools, or do these families reside in certain neighborhoods and not other and thus create social closure around these particular spaces?

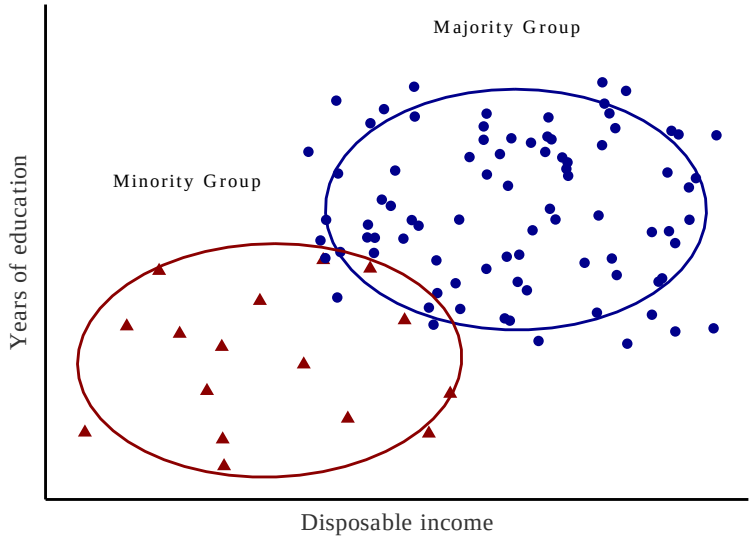
Table 3.1: Examples of nominal and graduate parameters (after Blau 1977b, 8)

Nominal Parameters	**Graduate Parameters**
Sex	Education
Race	Income
Religion	Wealth
Ethnic Affiliaction	Prestige
Clan	Power
Occupation	Socioeconomic Origin
Place of Work	Age
Place of Recidence	Administrative Authority
Industry	Intelligence
Marital Status	
Political Affiliation	
National Origin	
Language	

Consider the visualization in figure 3.2. It reflect a simple differentiation (same size distribution on a nominal parameter as figure 3.1) along two graduate parameters (education and income) and the correlation between these parameters. The population is differentiated based *both* on education (Y-axis) and income (X-axis), furthermore, there is a positive correlation between the two. Moreover, a nominal parameter (e.g., ethnicity) is being consolidated on these parameters. For example, if immigrants have both a lower education and lower disposable income, with only few exceptions, it consolidates their social status. It works so that if most members of a nominal group have little/high status on a set of graduate parameters, it reflects on the entire group and group membership becomes a sign of low/high status (Blau 1977b). In the extreme, this consolidation creates so-called *quasi castes*, where groups are viewed on a hierarchical strata that is a consolidation of differences in social positions. (Though note that such extreme consolidation as in figure 3.2 is an unrealistic example. So is extreme/complete intersection of parameters.) Therefore:

The consequences of structural parameters for processes of social association and mobility depend on their correlation. Intersecting parameters promote associations and mobility among groups and strata; consolidated parameters inhibit them (Blau 1977b, 64).

Figure 3.2: Simple visualization of structural differentiation



[1] Source: own figure.
[2] The statistical threshold of the ellipsiodes is at level = .75, meaning approximately 75% percent of the observations is captured with a center based on density.

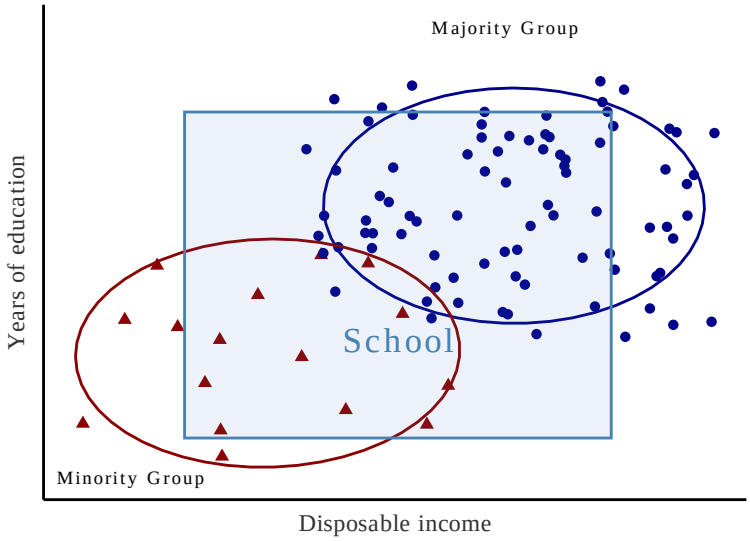
However, the most important structural feature is the degree of *intersection of parameters*, the opposite of consolidation, defined as the inverse of parameters positive correlation (i.e., their negative correlation) (Blau 1980). So while consolidation reinforces social distance,

> *intersecting parameters create crosscutting connections in the form of common social positions along some lines among people in different positions along other lines, and they attenuate social differences by giving most people who differ in some ways simultaneously something else in common.* (Blau 1980, 5)

Consider now figure 3.3. It represent the same structural differentiation as in figure 3.2, where each point represent a child and the parent's income and education is plotted on the axis. If we consider the school (not the institution, but actual schools) as a parameter along-side other parameters such as nation states, neighborhood, workplaces etc., it can act as a parameter ensuring intersection of parameters; even though ethnicity might be consolidated on graduate measures of income and education, in the particular school (represented by

the blue box) the children otherwise differentiated in social space, attend school together. Expressed differently, the student are differentiated among multiple parameters in social space, yet they are *also* characterized as being pupils at school X – school X then being a parameter. This would then be a hypothetical visualization of the social democratic ideal of the common school.

Figure 3.3: Simple visualization of structural differentiation with intersecting parameter



[1] Source: own figure.
[2] The statistical threshold of the ellipsiodes is at level = .75, meaning approximately 75% percent of the observations is captured with a center based on density.

In sum, both the degree of parameters' intersection and the consolidated differences of social positions reflects the *most important structural conditions in society* (Blau 1977a), because both have crucial consequences for social integration and conflict[10]. Describing the approach to the study of social structure, he noted, that '*not everything about social life can be explained in structural terms so narrowly conceived, but the endeavor here is to see how much can be*' (Blau 1977a, 27). Thus raising the question of what independent influences on social relations can be attributed to the structure of social positions.

3.3.1 On social structures

Just as with the concept of integration (cf. Rytter 2019), *social structure* is being robbed of its analytic usefulness when it contains a myriad of meanings and definitions (Rytina et al. 1988), it is therefore necessary to specify, what is meant by social structure to understand its meaning in the empirical analysis. As an analytic object, social structures exist as a social fact with effects on social life in Blau's theory, yet it has no relation to *functional* differentiation. In giving examples of a social structure he calls attention to dimensions such as economy's industrial diversity, a nation's concentration of wealth, a state's division of labor, a city's uneven income distribution, and a neighborhood's racial mixture (Blau and Schwartz 1984), and to add the obvious, nation states. Hence, more explicitly, the conceptualization of structure follows that of anthropologist Radcliffe-Brown (1940), who contrasted structure as social relations with structure as culture. He wrote:

10. While the structural analysis has been in focus for the whole of his career, Blau had a much more micro-oriented focus in his earliest publications, in which he were more interested in the mechanisms of interpersonal relationships and social attraction in small groups (Blau 1964) and how this attraction integrated individuals into groups (Blau 1956, 1960a, 1960b). On integration in small groups, he wrote: *The integrative bonds that tend to unite the members of work groups, not to speak of families, however, do rest on forces of social attraction that induce members to associate more with each other than the minimum requirement externally imposed upon them. Without such integrative bonds that identify the members as part of a distinct social entity, the work group would not really be a group but an assembly of individuals under a foreman* (Blau 1964, 14).
Though Blau's shifting attention from microsociological mechanisms of small-group integration to a more explicit macrosociological analytic position in his research, his base structuralists assumptions has remained consistent, revealed in a quote from his first major influential work, *Exchange and Power in Social Life* (1964): '*Some groups evolve as individuals with* opportunities for social contact *become increasingly attached to each other other and establish common bonds that stabilize their social association, as happens in the friendship cliques that form in the college dormitories or in the gang that originates in urban neighborhoods. These emergent groups often have diffuse boundaries and constitute, in effect, overlapping circles, with many individuals being peripheral members, and occasionally even core members, or several groupings; the friendship groups in high schools or neighborhoods typify this pattern*' (Blau 1964, 14, own emphasis). This notion of 'opportunities for social contact' – undeniably inspired by his Ph.D. supervisor Robert K. Merton – follows consistently throughout his career. Moreover, Blau has explicitly distanced his work from the ideas of Max Weber and Talcott Parsons in which the interest is the structure of social actions; his interest is the structure of social associations (Blau 1964).

> [D]*irect observation does reveal to us that these human beings are connected by a complex network of social relations. I use the term "social structure" to denote this network of actually existing relations.* (Radcliffe-Brown 1940, 2)

Besides regarding all social relations between persons as part of the social structure, Radcliffe-Brown included the differentiation of people and classes by their social role in his conceptualization. These are enduring structures which in spite of new people being introduced into a community through birth and/or migration, the general form of the social structure of a given community changes only slowly over time. Later Blau gave an essentially, conceptually, identical, though more distinctively sociological, definition:

> *My concept of social structure starts with simple and concrete definitions of the component parts and their relations. The parts are groups or classes of people, such as men and women, ethnic groups, or socioeconomic strata; more precisely, they are the positions of people in different groups and strata. The connections among as well as within the parts are the social relations of people that find expression in their social interaction and communication.* (Blau 1974, 616)

He also noted that '*social structure is an abstraction that cannot be observed directly* [...] *What a theory of social structure comprises and explains, therefore, depends on the conception of social structure adopted, which abstracts certain aspects of empirical reality and ignores others*' (Blau 1977b, 3), and more importantly, '*it does not encompass everything important in social life*', meaning it ignores cultural differences and another theory is required to deal with these differences (Blau 1977b). In other words, social structure is not culture and/or shared values, even though they might – to a degree – give rise to increasing social association between members of groups. Nevertheless, culture matters in relation to the salience of parameters in delineatating social space and positions. Take a nominal parameter such as skin color. The salience of skin color (i.e., its effect on social life) can be culturally mediated, meaning it has a stronger effect on life chances and social associations in some societies than others (Blau 1977b).

The structures and the inherent social positions – or roles as Merton (1968) termed them – in the structure is of interest because they impose collective constraints on the life of the *individual* (Rytina et al. 1988). Social positions is defined broadly to include *'any difference among people in terms of which they make distinctions among themselves in*

social intercourse'[11] (Blau 1993a, 203). Therefore, '*To speak of social structure is to speak of differentiation among people, since social structure is defined by the distinctions people make, explicitly or implicitly, in their role relations. An undifferentiated social structure is a contradiction in terms*' (Blau 1974, 616).

Returning to the geometric analogies, positions can also be operationalized as the ingroup being those proximate in space differentiated from the outgroup members who are distant positions and social associations. Differentiation of positions is thus the forms of differentiation that is delineated by structural parameters (Blau, Beeker, and Fitzpatrick 1984). For each type of position (for example income, education, or age) there exists a population distribution, and social structure is therefore a multidimensional space of positions with a corresponding internal distribution among positions (Blau 1980). On the effect of structure, Blau wrote:

> [...] *it is the social environment – the multidimensional composition of the population – that governs the life chances of individuals, both by supplying opportunities for and imposing constraints on their social relations, occupational choices, and outcomes generally. I conceptualize macrostructure as a population's multidimensional differentiation – specifically, its various forms of heterogeneity, like ethnic heterogeneity; of inequality, like economic inequality; and the correlation of various social differences, such as how strongly race and income are related.* (Blau 1993b, 6)

From this conceptualization of social structure it follows that structure cannot account for individual behavior whatsoever. Instead, it reflects the *'probabilities or rates of their social relations and actions, their educational, occupational, economic, and other opportunities. The structural context of a population can be looked upon as a structure of opportunities and life chances for its members.'* (Blau 1997, 21). More broadly, it can be said of structural conditions that they '*determine only the probabilities of various outcomes in a population, not the specific outcomes of particular individuals, but they limit our choices'* (Blau 1993b, 8). In this, Blau distances himself from influential contemporaries in the macrosociological discipline such as James S. Coleman, who argued that social phenomena must be explained

11. In this assumption, that people's role affects their relations, Blau uses Robert K. Merton's notion of role sets: '*Role-set theory begins with the concept that each social status involves not a single associated role, but an array of roles. This feature of social structure gives rise to the concept of role-set: that complement of social relationships in which persons are involved simply because they occupy a particular social status. Thus, a person in the status of medical student plays not only the role of student vis-a-vis the correlative status of his teachers, but also an array of other roles relating him diversely to others in the system: other students, physicians, nurses, social workers, medical technicians, and the like. Again, the status of school teacher has its distinctive role-set which relates the teacher not only to the correlative status, pupil, but also to colleagues, the school principal and superintendent, the Board of Education, professional associations and, in the United States, local patriotic organizations*' (Merton 1968).

on the basis of the individuals rational actions, not structural conditions[12] (Blau 1997), or George C. Homans who, with his behavioral sociology, more broadly believed social structures to be rooted in psychological processes of individual behavior (Blau 1974, 15). Instead, motivations such as ingroup preference (i.e., homopholy) that influences social relations are taken as an *a priori* assumption (Blau and Schwartz 1984) – an assumption which is backed by much evidence (McPherson, Smith-Lovin, and Cook 2001). By distancing himself from the work of other theorists, his argument becomes sharpened as being that individual preference[13] is partly structurally produced (Scott and Calhoun 2004). In other words, the question asked is how macrostructures shape patterns of micro relations. In this structural inquire, like in Durkheim's interpretations, the structural effects from the frequency distributions in social space must be analytically separated from the characteristics of individuals and their interpersonal relations (Blau 1960c). So, while sociopsychological theories do explain differences in a given population, it is only the differences between individuals that are being described. This should not be read as a neglect of sociopsychological analyses, because psychological preferences and cultural values of the individual *does* affect with whom we establish social relations with – particularly the close-knit ties such as intimate friends and marriage (Blau and Schwartz 1984). Nevertheless, the assumption is that social structure, as defined above, may suppress opportunities and the influence of cultural values and psychological preferences. For example, living in a poor neighborhood limits opportunities of associating with rich people, despite an preferences for such associations (Blau and Schwartz 1984). A more pressing example, if a family – minority or native – lives in a segregated area spatially separated from the rest of the city (i.e., limited transport possibilities and thus movement) the opportunities for attending school adhering to preferences are strongly limited. Or more generally:

12. Blau was not uninterested in the rational action of individuals or denied its validity, but wrote: *Considerations of rational choice do not determine [. . .] opportunities but become relevant only once these opportunities are taken as given to investigate why some and not other individuals are able to take advantage of the opportunities existing in the social structure. The distinctly sociological task is to study how structural conditions determine the opportunities and thus the life chances of a population's members. [. . .] Objective structural contexts that govern people's opportunities cannot be accounted for by the rational decisions of individuals.* (Blau 1997, 17)

13. Blau compares his understanding of homophily in social networks to Talcott Parson's notion of *particularism* and *univerlism* in the ego's choice of alters. Saying that '*in-group choice reflect particularism, because they manifest some common position in the social structure,* [Tough] *out-group preferences can also reflect particularism in the case as heterosexuality.* [Nevertheless,] *Only choices that are independent of the nexus between one's own and another's attribute are universalistic*' (Blau, Ruan, and Ardelt 1991, 1043).

> *Physical, biological, technological, and economic conditions limit one's options, and so does the social environment, the population composition in the place where people live. To be sure, people can migrate to another place, but this merely alters and does not eliminate the constraints the population structure imposes on their choices. Issues of free will and voluntarism are besides the point.* (Blau and Schwartz 1984, 10)

In outlying his approach the inherent assumption of macro-micro transitions becomes evident. The focus is how '*a society's or community's structure of different social positions affects the rates and patterns of relations among people by limiting or expanding their opportunities to realize choice*' (Blau, Ruan, and Ardelt 1991, 1038). Robert K. Merton exemplified this separation of the individual and structures in the middle of the previous century with his work on deviant behavior. Noting that there is a correlation between crime and poverty, but '*poverty is not an isolated variable*' (Merton 1938). Blau therefore, on the basis of this structural understanding of constraint and opportunities, disagreed with theories making phenomena (such as crime, or ingroup isolation) a matter of individual motivation and culture among specific subgroups/subcultures, arguing instead, for example, that '*the roots of crime* [is] *in the social structure, independent of the individuals involved.*'[14] (Blau and Blau 1982).

3.3.2 On social integration

Based on the notion of social structure presented in current section, Blau is confronting the common notion of the determinants for societal social integration; that common values and norms are the necessary basis for the social integration of societies. Instead, he argues that *common values do not suffice to integrate individuals into a network of social relations, which is the reason that integration is assumed to rest on social interaction* (Blau 1974, 620–21). In other words, the large and complex (i.e., differentiated) society that Durkheim observed, cannot rest (solely) on common set of values, norms, and interdependence as the basis for

14. With his wife Judith, Blau wrote on the connection between differentiation, opportunity structures, and crime, that '*Ascriptive socioeconomic inequalities undermine the social integration of a community by creating multiple parallel social differences which widen the separations between ethnic groups and between social classes, and it creates a situation characterized by much social disorganization and prevalent latent animosities. Pronounced ethnic inequality in resources implies that there are great riches within view but not within reach of many people destined to live in poverty. There is much resentment, frustration, hopelessness, and alienation. The state is akin to Durkheim's concept of anomie, particularly if we place less stress than Durkheim did ([1897] 1951:246-58, 270-73) on lack of regulation of passions by internalized norms and emphasize rather the prevalent disorganization, sense of injustice, discontent, and distrust generated by the apparent contradiction between proclaimed values and norms, on the one hand, and social experiences, on the other.*' (Blau and Blau 1982, 119). Therefore, they warn of the misinterpretation arising from the individualistic fallcy (the opposite of the ecological fallicy) based on the empirical finding that though '*the proportion of blacks accounts for much of the variation in violent crime among SMSAs, once inequalities and two other conditions are controlled, racial composition accounts for little additional variation*' (Blau and Blau 1982, 126).

social integration. It requires instead that groups are not isolated from one another, but connected through their members social associations (Blau 1977a). Though he does not mention it as such, I posits that in reading his theory, that the school – if productive distributions among schools is realized – is an obvious space for such intergroup contact to realize Blau's definition of social integration:

> *I* [...] *believe that the integration of various segments of society depends on actual associations among their members, on social intercourse between persons in different groups and hierarchical strata, not merely on common values or functional interdependence* (Blau 1977b, 2)

Integration is here being defined in terms of the intensity (not intimacy) of actual social interaction between persons in differentiated segments of society and the degree of structural constraints on these social interactions[15] (Blau 1974). The criterion for macrosocial integration then becomes high rates of associations among different groups (i.e., intergroup association) (Blau 1977a). Strong ingroup integration do not contribute to society's integration, instead it contributes to a society fragmented *into groups with few connections and therefore impedes society's integration as defined* (Blau 1977b, 11). In a school setting, the extreme example of strong ingroup integration is social closure around particular schools in the school landscape; the best example being the so-called 'Muslim private schools'. This is somewhat opposite to common – microsociological – interpretations that social integration rest on strong ingroup ties. A stark contrast to the paradoxically macrosociological perspective that strong ingroup ties becomes a disintegrative force because it fragments people into groupings with 'exclusive memberships' (Blau and Schwartz 1984). Meaning that the 'denser' networks within groups are, the more boundaries to social mobility and intergroup associations finds expression (Blau 1993a). Hence,

15. Blau's readings of Durkheim in relation to his understanding of integration becomes clear in his empirical study of how size (i.e., density) and the resulting increasing bureaucracy (as a result of differentiation) influences the likelihood of student demonstrations in American universities and colleges (Blau 1971) and the likelihood of violent crime (Blau and Blau 1982). He writes that '*size can be seen to have both a direct and an indirect effect on the likelihood of student demonstrations.*' and the '*statistical probability alone makes it more likely that there exists a sufficient number of committed radicals to lead a demonstration in a large institution*' (Blau 1971, 480–81). Without being mentioned directly, there is a clear parallel to Wirth view of the negative effects of increasing density in an urbanized world, evident in the following: '*Size also acts as a catalyst that promotes demonstrations indirectly, because human relations tend to become routinized and impersonal in administering the affairs of a large number of people [...] The lack of integration and the dissatisfaction of many students in impersonal academic institutions, as indicated by reliance on computers in administration, seem to increase the chances of demonstrations. [...] The interpretation suggested is that extensive administrative use of computers in universities and colleges is indicative of a bureaucratic and impersonal approach to students, which minimizes the importance of face-to-face interaction. Since they have little personal contact with administrators and faculty members who represent the institution, it is difficult for students to become integrated into the university and feel that they are fully part of it. [...] The resulting anomie and dissatisfaction encourages students to unite against the institution, making demonstrations more likely, even if the triggering issues are not specifically related to institutional policy*' (Blau 1971, 486–87).

> *The social integration of the various segments of a large population depends not on strong in-group ties but on extensive intergroup relations that strengthen the connections among segments and unite them in a distinctive community, notwithstanding their diversity.* (Blau and Schwartz 1984, 20)

Throughout the works reviewed in relation to present text, Blau repeatedly stresses the importance of analyzing the relationship – or intersection – between parameters, because this relationship yields new structural concepts; namely *multiform heterogeneity* and *consolidated status inequality*. These extensions on the parametric understanding are central, because in a society conceptualized as structurally differentiated, intergroup relations will logically depend on the intersection of the structural parameters by promoting intergroup relations (Blau 1977b; Blau, Beeker, and Fitzpatrick 1984). Intersection of parameters can be exemplified as: '*People live in a neighborhood, have an occupation, belong to an ethnic group, work for a firm, are more or less educated, and have socioeconomic status, and most of their fellow members in these various groups and positions are not the same*' (Blau, Beeker, and Fitzpatrick 1984, 586). These mulitigroup associations – with an assumed majority of weak-ties – link a myriad of groups in complex societies through the individual members (Blau 1993a). Recall figure 3.3 on how schools can potentially produce such a space for children of diverse backgrounds and characteristics. These notions is largely based on Merton's (1972) observation that people cannot help associating with *outsiders*, because their ingroup membership in one dimension (parameter, in Blau's terminology) makes themselves *outsiders* in other dimensions in which they frequent due to the multiform heterogeneity of complex societies. In other words, *multiform heterogeneity undermines barriers and creates structural constraints to establish intergroup relations* (Blau 1974, 615). Thus, the higher degree of intersection of structural parameters, the more extensive *potential* of intergroup relations (Blau 1977a). Blau – using Granovetter's (1973) oft cited work as the carrying argument – argue in line with the importance of multiform heterogeneity (or multiple group memberships) that the integration of society's groups depend on people's weak bonds (casual, unavoidable social associations), not their strong bonds (close friends, family), because it is these bonds which 'bridges' (cf. Granovetter 1973) intimate social circles and establishes social connections between differentiated groups. According to Blau (1977b, 10), *social integration thus rest only on few intimate bonds and a wide network of weaker social ties* because,

> *Integration on a large scale requires that no group is looked upon by the rest of the population as so alien and beyond the pale that intimate relations with its members are virtually inconceivable or taboo.* (Blau and Schwartz 1984, 10)

Expressing the multiform differentiation in terms of social integration, Blau points out that

> *The penetration of social differentiation into substructures exerts a centrifugal social force on social relations that integrates the substructures in the larger social structures. Although inequality hinders and heterogeneity furthers intergroup relaitions, they both further them if they penetrates into substructures, and so does the penetration of consolidated social differences* [while] *the internal homogeneity and relative equality of diverse and unequal groups promote ingroup bonds that fragments society* (Blau 1977b, 21).

3.4 School segregation as an index of social integration

As Beck (2006) remarks on Durkheim's work; though his work was not on suicides isolated but an analysis of social structure, suicide is not the best index of social integration he could have chosen, since he found both suicide in highly integrated societies (altruistic suicide) and suicides in disintegrated societies (egoistic suicide) making the measure possible to interpret in two opposite directions. Given its central place in much sociological work – empirical as well as theoretical – intergroup marriage rates is clearly a better indicator of the degree of social integration in a modern society. Blau also uses these rates as such in his empirically test of structural opportunities structures for the phenomenon of intergroup marriage (Blau and Schwartz 1984). I argue that the heterogeneity of schools (and school segregation) is likewise an indicator of social integration, because it is an indicator of whether the school act as a parameter reducing the social distance between population groups or these group actively choose not to place their children together or is structurally constrained in doing so; hence, consolidating the social distance between groups. Schools remain different than the common focus of residential segregation, because schools can be conceptualized as what I will refer to as *quasi-involuntary associations*[16]: Your child have to attend school, yet you can choose the preferred schools *among a set of actually available schools*, but you have no control over the choices other parents make. More dynamic processes in intergroup contact opportunities are, therefore, expected, than for example in the opportunities on the 'marriage market'.

There is no shortage of studies concerned with friendship networks and friendship formation within schools, most notably in the journal Social Networks. Yet, what Blau's theoretically contribution offer is an understanding of how institutional education is linked to social cohesion at the macrosocietal level by showing how it is empirically manifested in social relations or optimal structural conditions of such – something that has been lacking in the school research (Green and Preston 2001). In this perspective, school outcomes (i.e., the heterogeneity at school X and the average heterogeneity across schools) are expressive of

16. This notion relates to Blau's observation that '[s]*ince physical propinquity strongly influences social associations* [...], *most social associations occur within rather than among communities*' (Blau 1977b). Hence, limits in school choice in a given residential subareas (e.g., a municipality) is more important between barriers between these residential subareas.

patterns of associations between children in their daily life. School outcomes is then also a social phenomenon that may vary systematically between groups an thus give an indication of macrolevel social integration, *in one of a set* of dimensions in society.

4 | School outcomes and measures of exposure

> *The choice of an index must be subsidiary to the working definition of inequality to be used in the study and the one index may not be able to encapsulate that definition.*
>
> — Taylor, Gorard, and Fitz, *A re-examination of segregation indices in terms of compositional invariance*

The guiding interest, as formulated in the research question, is *school outcomes*. Outcomes are understood as intergroup exposure in school or at particular schools. Therefore, *outcome* is defined as the composition of groups within the school. In other words, school outcomes are the degree of *potential exposure* in institutionalized education or within particular schools – *potential* because we cannot observe if the children are further isolated *within* the schools, for example, in classes. The composition is referred to as outcomes because it is assumed some process of differentiation – be it extra-individual or individual behavior – determines the pupil composition in schools and hence the contact opportunities in this segment of society. Outcome also encompasses different measures that, though related, offer different views of school outcomes in a historical perspective. To manifest the obvious, the measures of outcomes all deal with differentiation of *natives* and *immigrants*, though immigrants are also referred to as the *minority* in line with the theoretical literature. Therefore, the inclusions of other parameters than ethnicity is to determine wether and how these parameters influences school outcomes at the group level. Before going into the details of the measures of segregation, the data used in the empirical analysis will first be presented.

4.1 Data

To investigate opportunity structures, the empirical analysis utilizes the Danish restricted census data. By having access to the population register, the data consist of the total census population in Denmark from 1985-2019 and not just a sample population. For the population of 8^{th} and 9^{th} graders, the pooled observation count is $N = 4,282,126$, of which $N_q = 2,266,229$ are unique persons (around the half because most persons appear two times

in the data, one time in 8^{th} grade and one time in 9^{th} grade, except the 9^{th} graders in 1985 and 8^{th} graders in 2019). From a time perspective, the data thus consists of an average of $N_e \approx 120,000$ observations per year. The utilized variables in the population register are **country of origin**, **migrant status** (native, immigrant, or second-generation immigrant), **municipality of residence**, and **parental I.D.'s**[1]. The country of origin category is, of course, a naïve grouping in that it cannot say anything about actual affiliation or identification. Important to clarify, the analysis follows the formal census definition of an immigrant, meaning that *both* parents are immigrants. Therefore, a child with a Danish father and a Thai mother is categorized as a native in the census. Likewise, a second-generation immigrant is a child who is born in Denmark and *both* parents are born in a foreign country. Moreover, the 'municipality of residence' is 'backward traced': In 2007, Denmark had a municipal reform reducing 271 municipalities to 98, but because municipal borders follow the borders of parishes, it has with few exceptions been a matter of dissolving borders rather than drawing new. Hence, the old municipalities can be aggregated to encompass the extent of the new without difficulties. The analysis thus deals with the *areas* of the current 98 municipalities before 2007 as if they were the current municipalities. Furthermore, the population data is combined with the Pupil Register, which holds yearly updated information on **school attended** and **grade level** for each person in the study period. The pooled count of unique schools with 8^{th} and 9^{th} grades (of all types) between 1985-2019 is $2,884$ – the count in 2019 was $1,706$ against $1,598$ in 1985, which speaks to the dynamic nature of the school landscape. In combination with the Pupil Register, the Institution Register is included. This register holds school-level information, of which the information on the **type of school** is of interest. Though unfortunately, the Institution Register only extends back to 2006, meaning that we only have information on whether a school is a private or a public school for the years 2006-2019, and because many schools have either closed, gotten a new institution number, or merged since 2007, we cannot just use the 2006 information to fully back-trace school information to 1985. To prevent bias from only including schools that are still open (between 2006 and 2019), all inquires concerned with 'type of school' will therefore only look at the years 2006-2019. The problem, though minor, being introduced by taking *all* schools which has a 8^{th} or 9^{th} grade into consideration is that it inflates the count of school by also included very small 'special needs' schools. An example is deaf-mute schools, which in many cases has only 1-3 pupils in these grades. These schools, therefore, easily become categorized as either 100% native or immigrant isolated due to the small number of pupils We cannot perfectly locate these schools, yet if removing all schools with less than ten pupils *across* 8^{th} and 9^{th} grade, most of these schools will be excluded. Yet some private schools does have a very small pupil count, so the risk is that some of these schools will be excluded as well. Therefore, these small schools are not permanently removed from the data, and the data is only being subsetted if

1. Few observation has only either a father or a mother registered as known parent in the register. In the case of unaccompanied refugees, there is no information on parents whatsoever.

the inclusion of such schools is deemed to produce a bias in the interpretation. The *average* measure of outcomes shows no meaningful difference when all schools are included – the difference is found only in the second or third decimal.

Driven by the assumption that group differentiation is structured by status differences as defined by Blau (cf. sec. 3.3.1), the analysis uses income and educational data on the children's parents. These measures include the **yearly personal income** for each parent (including all types of incomes, data not available for 2019), and the **highest completed education** for each parent. Though, the level of education of persons who have an education from a foreign country is not registered in the Danish registers; this information will therefore be missing for some immigrant children. Likewise, unaccompanied refugee children have no information on parents whatsoever, but it is deemed of interest to keep them in the analysis. Therefore their 'imaginary parents' (data-wise) is scored as the lowest possible value in income and education. The analysis uses the parents (family) as a unit, defined as the parent of the child, no matter if they are divorced or not, meaning that the parents' incomes are added to together, while the educational attainment of the parents is the highest educational level of the two (for example, if the father only has a lower secondary education and the mother has a university degree, the family-unit is counted as 'further education').

4.2 Measures of exposure and contact opportunities

Three related measures of school outcomes are used in the description of the opportunity structure within Danish institutionalized education: *majority advantage*, *heterogeneity*, and *separation*. Adhering to the research question as formulated, I refrain from micro-level modeling of the likelihood of attending schools with particular outcomes and attainment analyses (Fossett 2017) and constrains this for future research, focusing instead only on inequalities in contact opportunities at the *group level*. From this, it follows that the explanations of the processes of outcomes will be left mysterious and unexplained at the individual level, even though we observe outcomes to vary systematically between groups on certain parameters. A final general point to make on the measure of school outcomes. Since the analysis is based, not on sample data, but the actual census data, *ANOVA* and statistical significance is beside the point in that the measure of group differences is the *actual* group difference.

4.2.1 Majority advantage

Majority advantage is defined simply as the proportion of natives at a given level of analysis, given as $p_i = \frac{Y_{native}}{Y_{total}}$, in which both Y_{native} and Y_{total} only consist of the counts of 8^{th} and 9^{th} graders. Majority advantage is thus a two-group measure; natives compared to all others. Minority advantage is then $p_j = 1 - p_i$. This is not to cast a very simple measure in abstract terms to make it appear more advanced than it is; instead, the term, majority advantage,

is to stress how this otherwise simple measure captures the central element of the theory of opportunity structures that is the relative size difference between two groups. To be sure, majority advantage is then a measure of exposure (or lack thereof) to the minority population – and implicitly the majority's ingroup exposure – which in interpretations translate to *potential intergroup contact*.

4.2.2 Heterogeneity

Since majority advantage is based on the relative size difference between only two groups, it can give rise to a somewhat misleading interpretation of the extremity of how high degrees of minority advantage, p_j, translate to migrant-isolation from natives, because the migrant group at schools more often than not is comprised of children of many different ethnic origins. Meaning that it is assumed that a hypothetical school with minority children of which all are of Turkish origin is qualitatively different from a school where the minority population of the same size is comprised of a myriad of ethnic origins. This is captured by an index of *heterogeneity* and therefore produces a more 'nuanced' measure than the absolute two-group proportion. In consequence, a school with migrant pupils from only a single origin country score the same as a school with only native pupils – this is in line with the contact perspective because what we assume to be necessary for integration is *mutual* exposure, and not just immigrants' exposure to natives or vice versa. This type of measure has also been the most central measure throughout Blau's work since he generally did not take a two-group perspective – for example, migrant-natives – but focused on a multi-group society, organization, or community.

One of the most common measures of heterogeneity – or diversity, depending on the discipline – is the Simpson index, expressed as:

$$\lambda = \sum_{g=1}^{R} p_g^2 \tag{4.1}$$

The index has a direct relation to the concept I term majority advantage, in that p_g is the proportion of the group g, while R is the diversity of the data, i.e., the number of groups. In the two-group case $R = \{majority, minorty\}$, and the value is the sum of p_i^2 and p_j^2. The interpretation of λ is then the probability that two randomly drawn people within a unit (school, municipality, or nation) belong to the *same* group. Being interested in *intergroup* contact, a more convenient extension of the Simpson index is the Gini-Simpson index (also referred to as the Blau index in some strains of literature), expressed as:

$$1 - \lambda = 1 - \sum_{g=1}^{R} p_g^2 \tag{4.2}$$

The interpretation is now more in line with the theory; the probability that two randomly drawn persons belong to *different* groups, i.e., the probability of intergroup exposure at a given level of observation. Majority advantage and heterogeneity are, of course, correlated, but we can observe high minority advantage in combination with both low and high degree of heterogeneity, which informs us on whether group differentiation is meaningfully defined by origin country as a parameter.

4.2.3 Separation

The final measure related to school outcomes and opportunity structures is the *Separation* index (S). S is related to the heterogeneity and probabilities of in- or outgroup contact in that it is a standardized P^*-index[2]. P^* can be interpreted as the average probable interaction between either a member of another group or one's own group *accounting for the total population among a set of units* (e.g., between schools in a municipality) (Bell 1954). Bell (1954) is an early example of noting the importance of detecting *interaction probabilities*, but as Massey & Denton (1988) notes, his work was largely forgotten – or neglected – until Blau (1974) gave *interaction probabilities* theoretical attention and Lieberson (1980) reintroduced the P^*-measures, and the standardization know under many names: *eta*^{2}, *the variance ratio index*, *the correlation ratio*, and *the separation index* (Fossett 2017). What is almost always noted in the presentation of P^*-measures is their *asymmetric* nature due to the composition dependence; meaning that because we see an increased majority-minority contact, it does not necessarily follow that we see an increasing minority-majority contact, given the relative size differences – the same observation as Blau gave theoretical attention (cf. sec. 3.3.1). Some has presented the composition dependence as a limitation inherent in the P^*-indexes (e.g., Massey and Denton 1988; James and Taeuber 1985), while others have highlighted the conceptual potential in this inherent asymmetry in composition variant measures (e.g. Lieberson 1980; Frankel and Volij 2011). Though I agree with the potential, particularly due to its more

2. The P^*-indices measure the probability of a minority member (x) interaction with a majority group member (y) – also known as the *exposure index* ($_xP_y^*$).
The exposure index is expressed as:

$$_xP_y^* = \sum_{i=1}^{k} \left(\frac{n_i}{N_{mi}}\right)\left(\frac{n_i}{t_i}\right)$$

Whereas the related *isolation index* is expressed as:

$$_yP_y^* = \sum_{i=1}^{k} \left(\frac{m_i}{N_{ni}}\right)\left(\frac{n_i}{t_i}\right)$$

Where N_{mi} is the total count of minority members in the unit, x_i is the count of minority members in subunit i, y_i it the count of majority members in the subunit in question, while t_i is the total population count in the subunit. $_xP_y^*$ thus expresses the average probability that a randomly selected minority member's next interaction will be with a majority member accounting for the distribution of the total population, while $_yP_y^*$ is the average probability a majority member next will meet another majority member.

meaningful relation to a theoretic framework, the one critique I agree with is related to the comparative potential; without population correction large descriptions of segregation (e.g., on a national scale) are essentially 'just' a population map of minorities, meaning that it only tells us where many/most minorities reside, and nothing of the *nature* of separation. Fossett (2017) has shown how including standardization of the P^*-measures reveals not just isolation and exposure but also *polarization*. In other words, we can answer whether a group is primarily attending schools where their own group predominates, which is not immediately interpretable based on the *interaction probability*. This polarization is an indication of what Fossett terms *prototypical segregation* (i.e., actual separation between groups and not just *uneven* distribution of minority group). The separation index can be most conveniently expressed in a 'difference in means' form, after Fossett (2017):

$$S = Y_1 - Y_2 \tag{4.3}$$

Where, Y_1 is the mean of the school outcome y for individuals in Group 1 (the majority), given as $(1/N_1) \cdot \sum n_{1i} y_i$ for school-level data and as $(1/N_1) \cdot \sum y_{1k}$ for individual-level data. Y_2 is the mean of y for individuals in Group 2 (the minority), given as $(1/N_2) \cdot \sum n_{2i} y_i$ for school-level data and as $(1/N_2) \cdot \sum y_{2k}$ for individual-level data. n_{1i} and n_{2i} are the respective counts of Group 1 and 2 members in the i^{th} subunit. p_i is the school proportion of Group 1 in the i^{th} school, given as $p_i = n_{1i}/(n_{1i} + n_{2i})$.

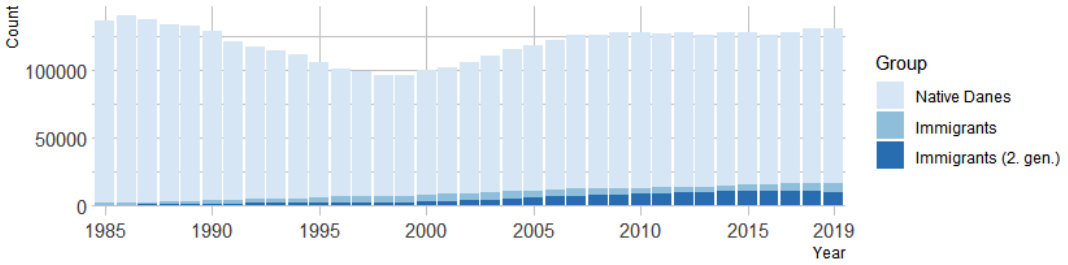
Important to note on S compared to the other measures introduced is that it is only meaningful on a scale higher than the individual school. What this, in turn, offers is informing us on the dynamic between schools on different scales (municipal or national). It is more telling of the nature of differentiation by indicating to what degree schools within a municipality are characterized by *actual* segregation, which is not necessarily the case just because a single school has low values on p_i, nor is it the same as the average school outcomes. The interpretation of the extreme value of $S = 1$ is that immigrants *only* attends schools with other immigrants, and natives *only* attends schools with other natives. Oppositely, $S = 0$ is interpreted such that at each school in the municipality, there is an equal chance of meeting an ingroup member as there is of meeting an outgroup member.

5 | Heterogeneity and inequality in the Danish school landscape, 1985-2019

What should be clear from the previous two sections is that the present section will deal with the heterogeneity and inequality of the schools in the Danish school landscape. In other words, describe the distribution of natives and immigrants between schools, and whether covariance of parameters structures the differentiation between the two groups to either further or retard migrant-native contact opportunities.

Looking first at figure 5.1 to understand the demographic context, what is immediately evident is that there has been a steady increase in the population of immigrants in the age group (14-15). Nevertheless, the difference is highly uneven, with a percentage of natives of $> 98\%$ ($\approx 135,000$ natives, $\approx 1,700$ first-generation, ≈ 500 second-generation) in 1985 and $\approx 87\%$ in 2019 ($\approx 114,000$ natives, $\approx 6,000$ first-generation, $\approx 10,500$ second-generation). We would, therefore, expect that immigrants in 1985 to have few possibilities of being isolated in the school system, while this possibility becomes greater continuously until 2019. Consequently, the native children's intergroup contact opportunities should – all things equal – be higher in 2019 than in 1985.

Figure 5.1: The population of 8. and 9. graders, 1985-2019

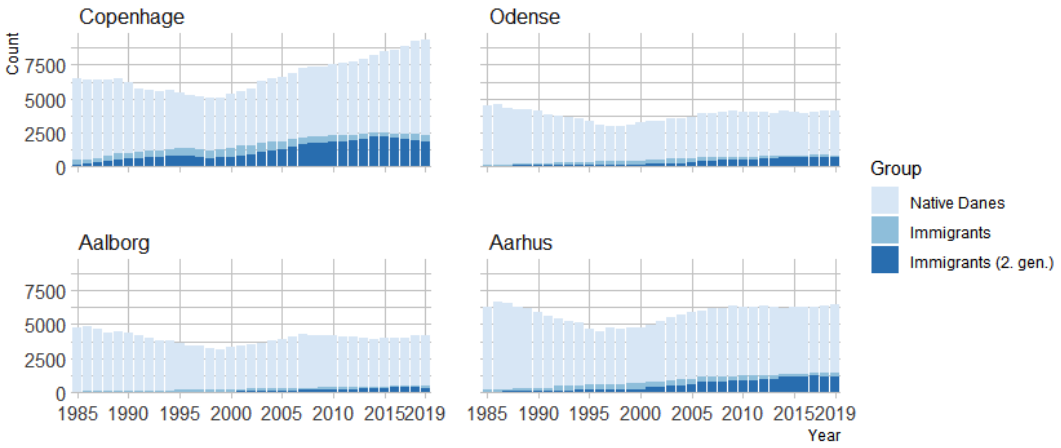


Source: Own figure based on restricted register data from Statistics Denmark (DST).

5.1 Demography

While figure 5.1 reveal the national distribution of the three groups, there are large local differences between the individual municipalities. Showing the four largest municipalities in Denmark in figure 5.2, the uneven distribution between municipalities are evident. Copenhagen has had a greater absolute population size of immigrants than the three other municipalities, yet there is also a larger population of natives – Aarhus follows relatively close. Therefore, we would also expect there to be local differences in opportunity structures.

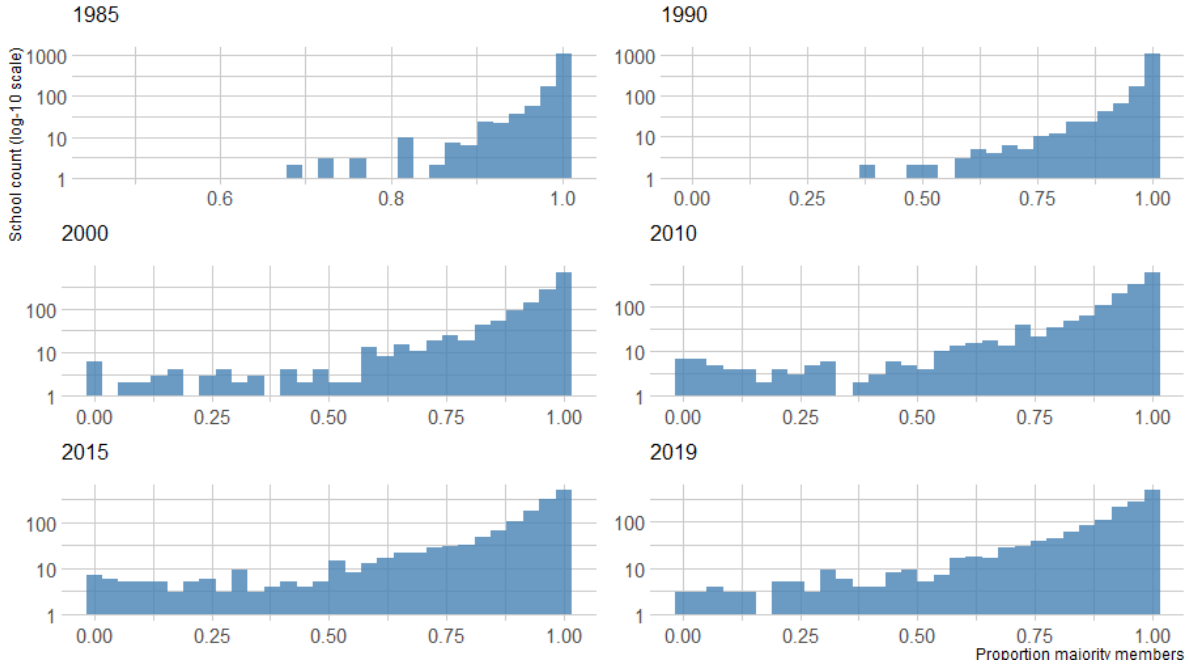
Figure 5.2: The population of 8. and 9. graders, 1985-2019, in the four largest municipalities



Source: Own figure based on restricted register data from Statistics Denmark (DST).

What is more interesting than the total composition is the school outcomes of the individual schools (i.e., the group distributions *within* the schools). Consider figure 5.3, showing the distribution of schools in Denmark based on their outcomes measured as majority advantage, p_i. In 1985 and 1990 there are less than 10 schools with a majority (native) proportion less than 50%. It is not before 2000 onward there is an increase in schools with more than 50% immigrants. Note also the relatively large decrease in schools with 100% natives from 1990 to 2000. Considering only the schools with more than 10 pupils in 8^{th} and 9^{th} grade, there were 900 schools with only native pupils in 1990 (ranging from a total pupil count of 11 to 462 in the age-group), while just ten years later in 2000 this count of schools is 556. In 2019, the number was 401. So, from 1990 to 2000, the perfectly native-isolated schools drops on average by 34 schools per year, while it drops 8 on average per year between 2000 and 2019. (To be sure, dropping does not mean that the school closes. It means that at least one immigrant attends the school, and the school enters another outcome category.)

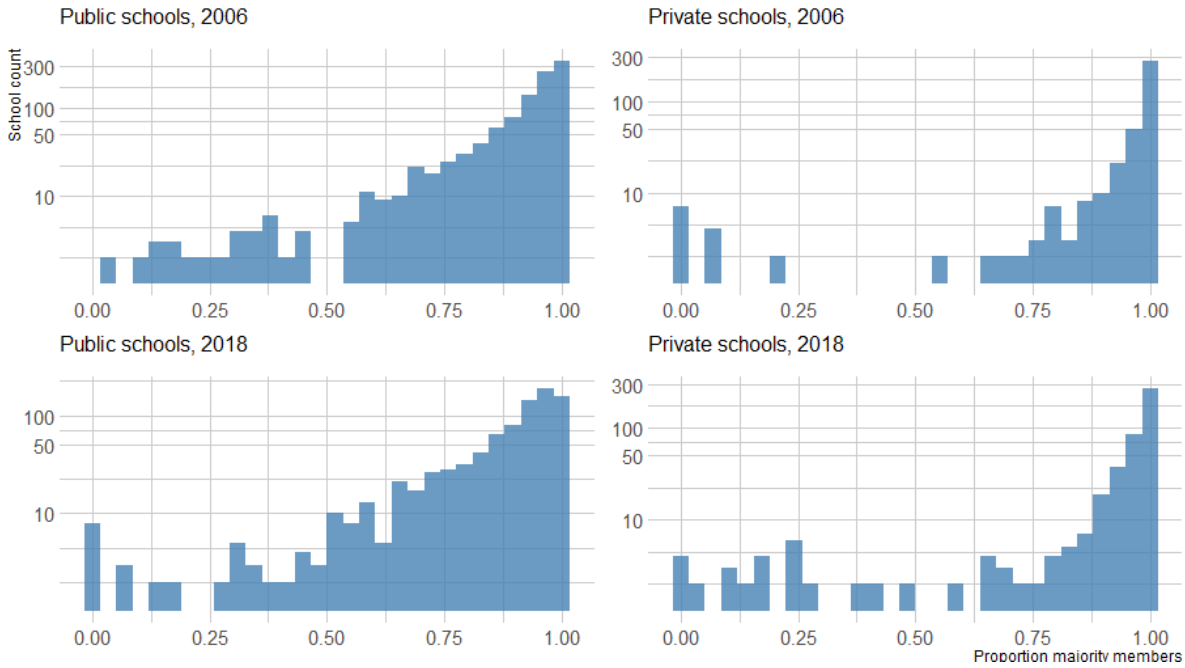
Figure 5.3: Distribution of school outcomes (majority advantage)



Unfortunately, the institution register is only available from 2006 to 2019 (cf. sec. 4.1), meaning it is not possible to assess how much private schools might account for the large changes in minority-isolated schools between 1990 and 2000. What can be said of the difference between the two types of schools from 2006 to 2018 is that the distribution of school outcomes are more skewed in private schools than in public schools over the whole period (see figure 5.4). Meaning that, as noted by others (Christensen and Ladenburg 2012), there are both more private schools with 100% natives and more private schools with 100% immigrants than among the public schools and hence less heterogeneous private schools than there are heterogeneous public schools (counting all schools, also those with less than 10 pupils). On the other hand, the number of private schools with no native pupils is decreasing – some of which is due to the increased negative attention on the so-called 'Muslim private schools' that has resulted in the loss of state subsidies and the closure of some of these school in consequence. We observe more private schools with 50% immigrants in 2019 than there were in 2006, though. A more interesting story is found when looking at the longer historical perspective without regard to 'type' of school. Looking at the schools with more than 10 pupils, there were 1,436 schools in 1990 and 1,430 in 2000. Thus, it cannot be changes in the absolute count of schools making the distribution of school outcomes more even. Rather it should be explained by the absolute size of the immigrant population in Denmark. In 1990 there were 4,023 immigrants in 8^{th} and 9^{th} grade (3.2% of all 8^{th} and 9^{th} graders), while there in 2000 were 7,828 immigrants (8.5%), coupled with a decrease in the native population (see 5.1) it has resulted in a +5%-point increase over just 10 years, meaning the average yearly change

has been .5%-point. In 2019 there was 16,250 immigrants (14.4%) – more than a doubling of the total immigrant population – but a yearly average change a little smaller (.3%-point). Expressed differently, new numeric conditions on a structural level change patterns of *possible* associations by creating new school outcomes, resulting in the observed continually decrease in complete native isolation in institutionalized education. Though we cannot say the changes have stabilized between 2000 and 2019, there are fewer immediately visible changes. In other words, the changing numeric conditions has a diminishing effect on school outcomes at this level of observation; a hypothesis being that the minority population has gained a size large enough to produce segregation processes, expressed as the unequal distribution between schools followed by increasing minority isolation.

Figure 5.4: Difference in distribution of school outcomes between public and private schools

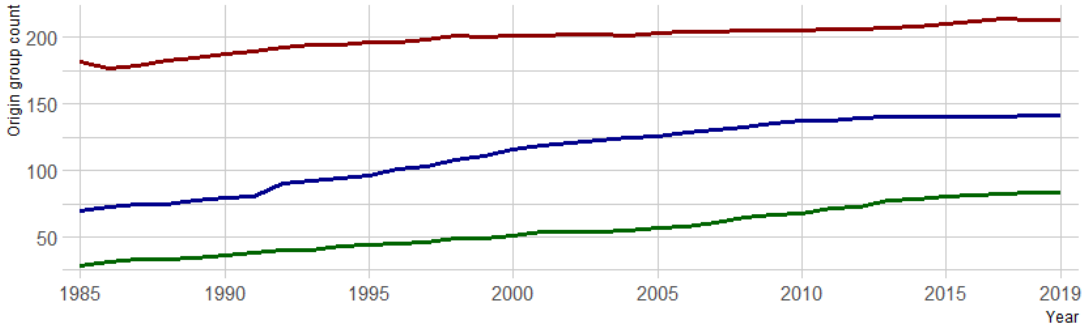


5.2 Heterogeneity and density

Looking more particularly at the level of *heterogeneity* in Denmark, we can tell a more nuanced story of immigration as an exogenous factor and a driver of numeric conditions. Though immigrants are treated as one group, based on the assumed to matter in itself as a parameter that persons are 'non-natives' in terms of the natives' isolation and avoidance behavior, they are not in all aspect of social life *a* group, but multiple subgroups that are hypothesized to matter in terms of group differences in school outcomes.

Looking at figure 5.5, it is apparent that the variety of the composition of origin countries in the inflow of immigrants is becoming increasingly varied. With no concern to the absolute size of the origin groups, the variety of origin countries in the total Danish population increases from a low 177 groups to a current high 214 groups over the 35 year study period (red line). Setting the criteria for a group to at least 100 members of the same origin, the increase rises from a low of 70 and a high of 141 groups (blue line). While a criterion of at least 1000 members to constitute a group shows a low of 28 and a high of 83 groups (green line). What this show is there are many small groups in Denmark (less than 100 members in a year), which generally are not large enough to become isolated around themselves unless they are very similar to other small groups on parameters such a religious conviction (and culture more generally) and/or language, or the groups are extremely segregated residentially. At the same time, we see a rather rapid increase in larger population groups (both 100+ and 1000+). A steeper increase that is explained in more 'chain migration' (exogenous factor) and/or higher birthrate among particular origin groups (endogenous factor). That groups become larger in absolute size is important to the potential of isolation and being 'socially self-sufficient', as discussed in sec. 3.3.1.

Figure 5.5: Variety of unique origin country groups



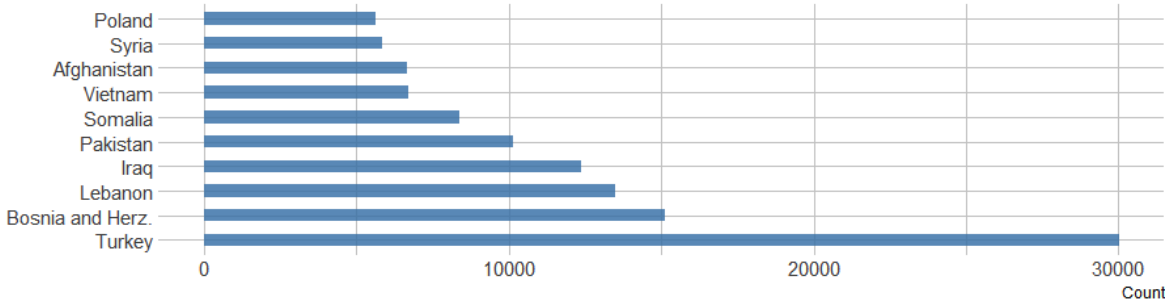
Source: Own figure based on restricted register data from Statistics Denmark (DST)

Red is all groups in the population. Blue is all groups with at least 100 members.
Green is all groups with at lest 1000 members.

Looking at the top 10 origin countries as of 2019 (pooled) in figure 5.6, it is clear that one group dominates, the Turkish immigrants, which is no surprise given their relatively visible presence in Denmark since the 1960's guest-worker programs. Moreover, it is notable that seven of the ten countries are what we – unfairly or not – often refer to as 'Muslim countries.' The exceptions being Bosnia (though Islam is the largest religious community in the country), Vietnam, and Poland. In line with the expectation of *how* size matters, each of these group are – in principle – large enough to be isolated within the school system *if* they are unequally

distributed across the school landscape.

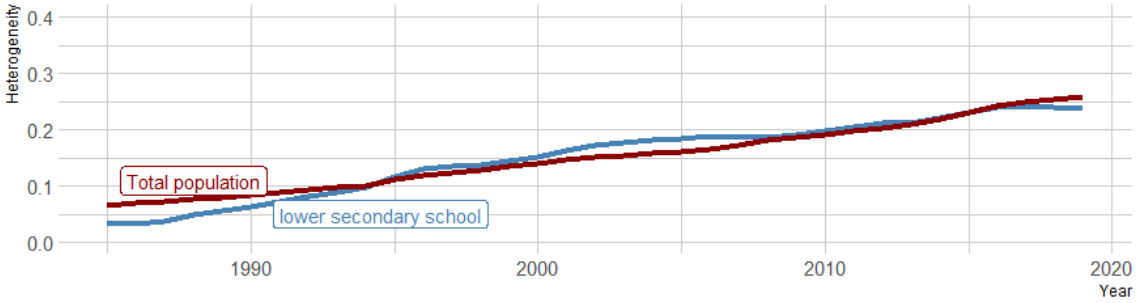
Figure 5.6: Top ten origin countries among 8. and 9. graders, 2019 pooled counts



Source: Own figure based on restricted register data from Statistics Denmark (DST).

Because both the number of groups and the respective size of society's groups are defining for the degree of heterogeneity, it is given that the overall probability of meeting an outgroup member is increasing from 1985. This increase is also evident in figure 5.7. The figure includes the measure of heterogeneity for the whole population and the measured heterogeneity in the lower secondary school. We see that there is no meaningful difference between the two measures. Hence the lower secondary school closely mirror the heterogeneity of the population at large. Interpreted, it shows how the probability of a random intergroup encounter – all things equal – is around 5% in 1985, but in 2019, this probability is 25%. In other words, the *contact opportunities* have increased five-fold on a national level.

Figure 5.7: Heterogeneity in total population and in lower secondary schools



Source: Own figure based on restricted register data from Statistics Denmark (DST).

Finally, in relation to *density*, the most relevant question is the size of schools because the smaller the school, the higher is the potential for isolation. As remarked in section

4.1, without the historical institution register, it is impossible to sort out special education institutions. Though they are relevant to the full picture and in their own right, the focus is on the 'normal' schools with access for all and not just a specific population segment defined by handicaps. In 2019, there are 196 schools with 10 or fewer pupils. With those sorted off, the average school size (8^{th} + 9^{th} grade only) is 87, while the average size is 77 with all schools included. The median is respectively 82 and 65. Hence, there is an assumingly meaningful difference in interpretations if we include all schools. Returning to the matter at hand, in 1985, the average grade size (10+ pupils) was 96 (median 92). The average has thus decreased 9 pupils despite only a relatively small decrease in population size (135,722 in 1985 and 129,131 in 2019), which potentially has a negative effect on the contact opportunities in the school landscape at large. *Density* is, in other words, decreasing in the school due to an increase in the number of schools. In sum, the average size of grade 8 and 9 at the individual schools is getting smaller, which is somewhat contrary to expectations due to relatively many public school closures in recent years. The obvious explanation is therefore the increase in private schools and the increase in children attending these private schools are changing the structure feature of the school landscape (cf. also discussion on private schools in section 2.1).

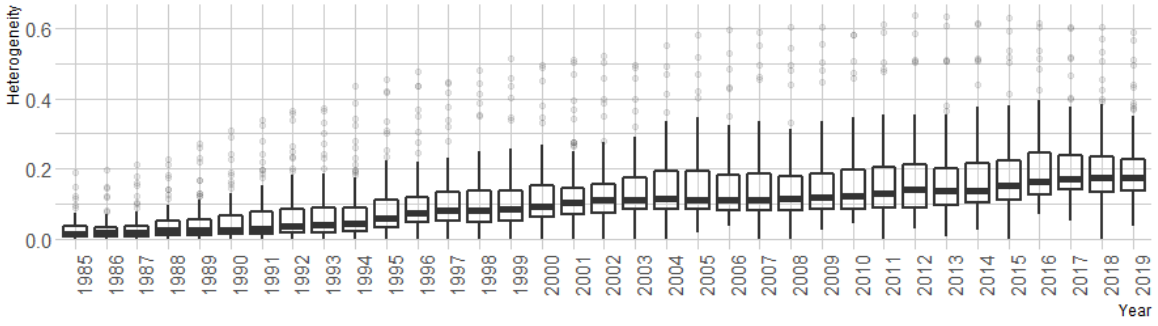
5.3 School outcomes

The demographic changes outlined above are defining for the outcomes for schools. Starting at the aggregate level, we see in figure 5.8 these changes expressed in the median heterogeneity at the municipal level. Between 1985 and 2000, the median chance of a random encounter with an outgroup member at the municipal level rose from essentially zero to 10%, while it in 2019 was nearing 20%. From 2006 onward, we start observing municipals with a degree of heterogeneity of .6, or a 60% chance of a random outgroup encounter[1] (for both the minority and the majority). Figure 5.9 shows the same measure at the school level[2]. We see a lower, but correlated, average across the years. At the same time, we also see much variety between schools within the individual years, though there is a clear trend of generally higher heterogeneity at the school level, especially when compared to the years before 1995.

1. The measure includes all schools, not just those with 10+ pupils, since the average value in heterogeneity is only marginally different on the second and third decimal.

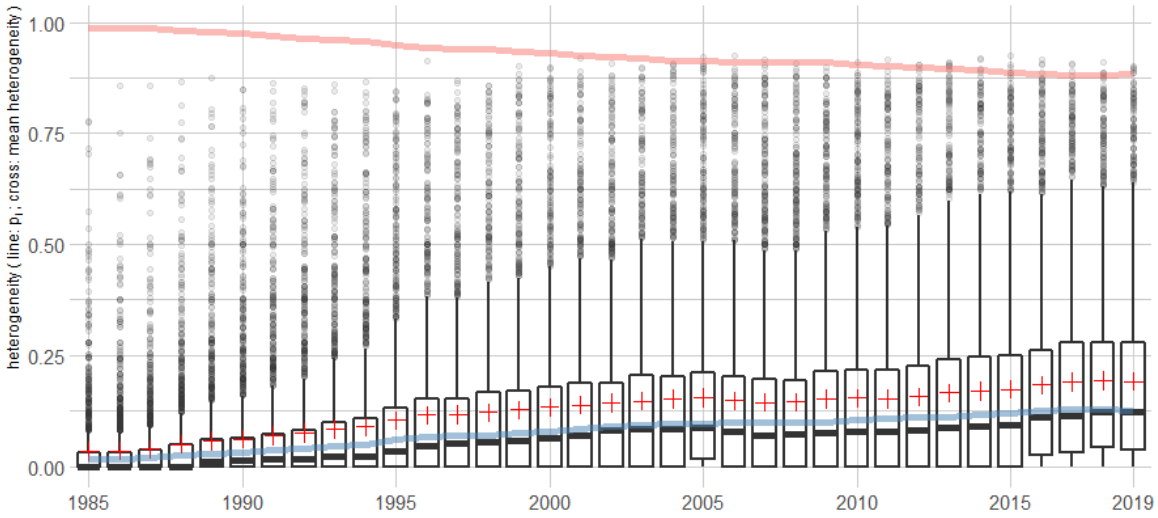
2. Also including all schools, not just those with 10+ pupils, since the average value in heterogeneity is only marginally different on the second and third decimal.

Figure 5.8: Boxplot of heterogeneity at the municipal level



Source: Own figure based on restricted register data from Statistics Denmark (DST).

Figure 5.9: Boxplot and average heterogeneity at the school level



Source: Own figure based on restricted register data from Statistics Denmark (DST).

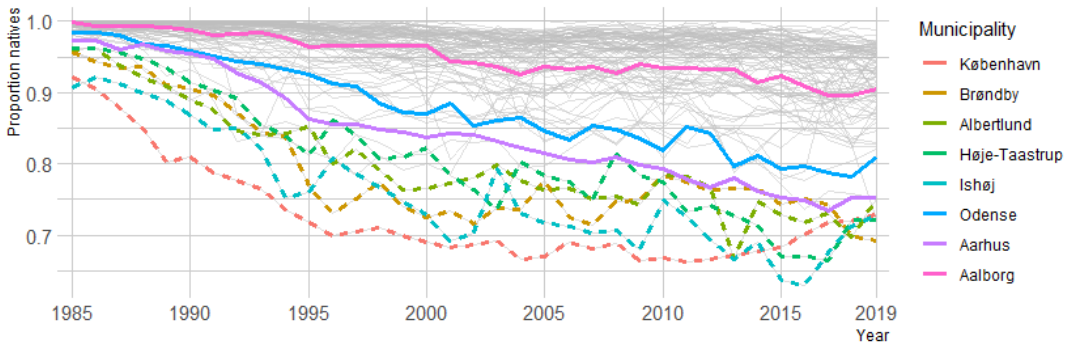
Red line is average mean majority proportion at the school level.
Blue line is mean minority proportion.
Crosses is mean heterogeneity.

While heterogeneity and majority advantage (p_i) are related and correlated, they are not strictly the same, because majority advantage focus on a two-group situation; native-minority distribution (cf. sec. 4.2). Consider again figure 5.9, the national average proportion of majority members (i.e., the natives) in schools is decreasing steadily (and the average proportion of immigrants is thus oppositely increasing). Yet, the trend in average heterogeneity at the school level does not correlate as strongly with that of the municipal level from the year 2005. Hence, some social or residential (market) processes seem to be

brought about due to – partly at least – unequal distributions of groups in space and/or changes in the school landscape. Either at the subgroup level (i.e., size differences in national origin groups) or the local level (i.e., distributions between schools at the municipal level). As with most spatial outcomes (which school outcomes essentially are) it can be difficult – if not impossible – to fully untangle to underlying processes (Ord and Cliff 1981). Nevertheless, in this descriptive endeavor, what can be said is that we seemingly see the contours of stagnating levels of overall heterogeneity.

Turning to majority advantage, p_i, we saw again in figure 5.9 this to be steadily decreasing at the national level, which is to be expected given net immigration inflows, while figure 5.8 gave an indication of rather stark local differences between municipalities. Figure 5.10 then qualifies these assessments and reveal a highly uneven development in the settlement of immigrants. The figure show the average school outcome (majority advantage) in each municipality, over time, highlighting the largest municipalities and the municipalities standing out with relatively low levels of majority advantage. The dotted lines represents Copenhagen and its neighboring municipalities. Many municipalities still have less than 10% immigrants (in the age-group) as of 2019. We also see that in 1985 many immigrants were residing in the municipalities in the greater Copenhagen area and disproportionately in the municipality of Copenhagen until the years between 1995-2005. Yet, the interpretation of this unequal distribution's effect on contact opportunities is ambiguous: On one hand, there is a high degree of intergroup contact opportunities for the majority population in these municipalities in that it is possible for most natives to actually have an intergroup association. On the other hand, the relative size of the minority and majority groups make it so that actual isolation of the minority is made possible given their numeric conditions. The minority does not *have to* seek outgroup contact – they could, for example, in principle, start minority-only schools because their absolute size alone make it economically feasible to finance such a school, making the distribution of isolated schools (i.e., 'pure' immigrant schools, or *segregated* schools) important to look further into.

Figure 5.10: Majority advantage at the muncipal level

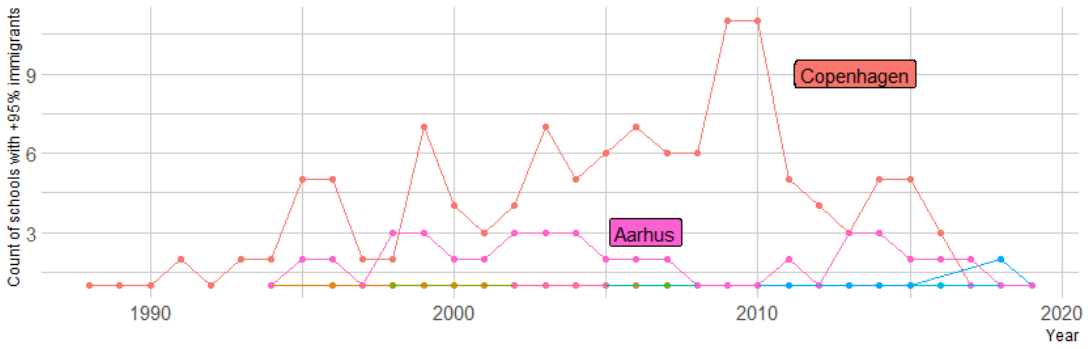


Source: Own figure based on restricted register data from Statistics Denmark (DST)

Dotted line represent Copenhagen and municipalities neighboring Copenhagen.

An 'extremely' minority-isolated is defined as schools with +95% immigrants (only a handful of these schools has 1 or 2 natives as defined in the register). An 'isolated school' is then a school with low opportunities for migrant-native contact and a high degree of potential minority isolation. In the 'raw' count of schools, there are 30 municipalities with at least one isolated school, though many of these have just 2 pupils in 8^{th} and 9^{th} because many of these are 'preparation schools' for young people under 25 who have had difficulties finishing lower secondary school. If we again then set the criteria to at least 10 pupils in the two grades, 16 municipalities have or have had at least one such isolated school. 6 of which are not located on Sjælland, and 4 of these is in the greater Copenhagen area. Until 1994 Copenhagen was the only municipality with such schools. Important to note in figure 5.11 is that the municipalities in the greater Copenhagen area do not stand out or is not present all years, meaning that despite having a high *proportion* of immigrants, there is either not a large enough group in absolute numbers or enough schools to structurally facilitate such isolation that is observed in Copenhagen and Aarhus.

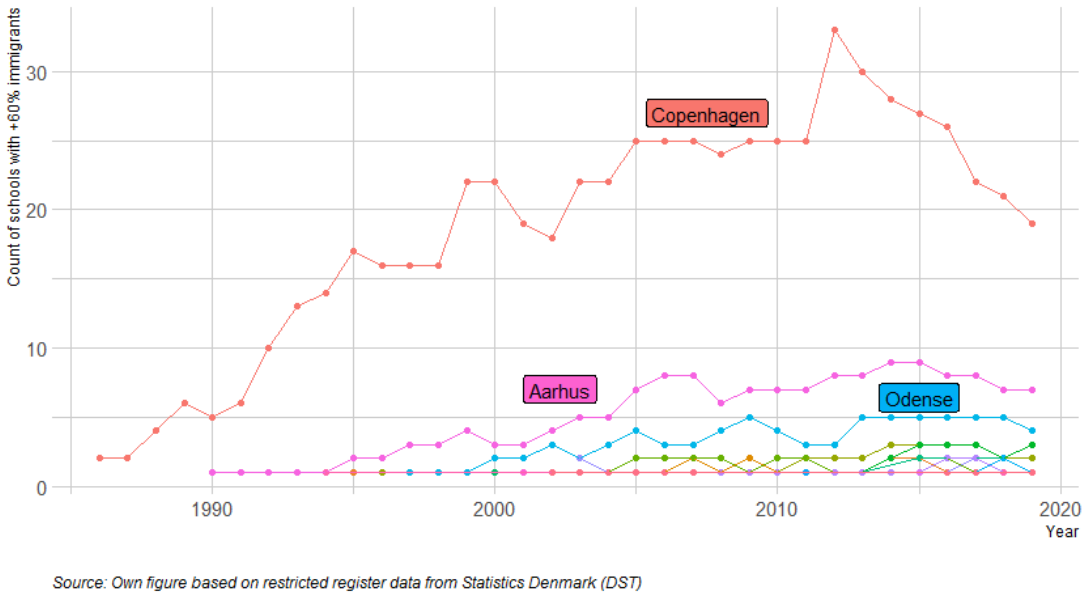
Figure 5.11: Count of the most isolated 'immigrant schools'



Source: Own figure based on restricted register data from Statistics Denmark (DST)

Looking at minority isolated schools, not in the extreme, but with a criteria lowered to a proportion of +60% in figure 5.11 (only including schools with more than 10 pupils). Again notable is that the municipalities around Copenhagen with large proportion of immigrants still do not stand out. Moreover, until 1990 Copenhagen and Frederiksberg is the only municipality(ies) with 'minority isolation.' Expressed differently, *absolute sizes* of groups seem to matter more than *relative sizes* between groups in terms of isolation and segregation. For the whole period, it is the three largest municipalities and thus also the three municipalities with the highest absolute count of schools with most minority isolated schools. (Copenhagen and Frederiksberg are counted as one municipality because the majority of children attending these isolated schools live in the municipality of Copenhagen.) Copenhagen has 123 schools in 2019, while Aarhus and Odense had 55 and 66, respectively. There is an – unsurprising – high correlation between an absolute count of 8^{th} and 9^{th} graders in the municipality and the count of schools ($r = .95$). However obvious these observations might be, their implications is important to our understanding of migrant-native exposure. The correlation offers another dimensions to the 'effect' of size on structural opportunities for contact. Expressed differently, for 'minority isolated schools' to exist, there need to be both enough minority members *and* enough schools to make these schools possible. *School density* is therefore central in our understanding of migrant-native exposure in schools on a societal level. The rather drastic drop in the count of isolated schools in Copenhagen can be found in changes in the school landscape. Between 2012 and 2013, the number of schools changed from 130 to 117 and thus 'forced' some children to attend new schools, which have resulted in less unequal distributions of immigrants between schools. Showing how changes in the school landscape change intergroup contact opportunities.

Figure 5.12: Count of isolated 'immigrant schools'



Source: Own figure based on restricted register data from Statistics Denmark (DST)

5.4 Inequality and consolidation

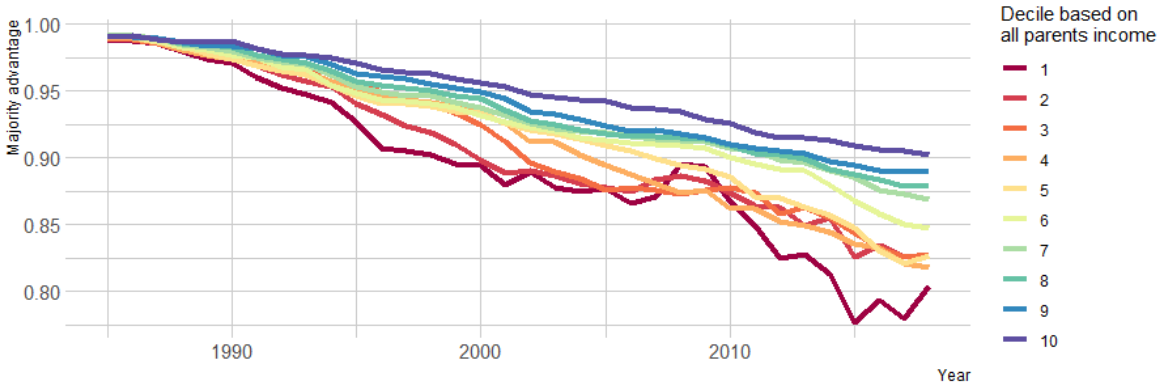
Inequality is conceptualized by Blau in a geometric analogy as status *distance*, i.e., how 'far' we are from each other on parameters meaningful for how we see our own and other's position in social life. To understand whether ethnicity is a parameter in itself, we must also first understand the *vertical* inequality in Danish schools (heterogeneity being *horizontal* inequality) and, more importantly, whether heterogeneity is consolidated by inequality.

5.4.1 Income differentiation in school outcomes

Figure 5.11 conclusively show a systematic difference in school outcome (majority advantage) differ conditioned by the income decile of the family – even though majority advantage in average school outcomes has decreased for all income groups across the study period in pace with increasing immigration. (Note that the deciles are calculated based on the income of the population of families with children in secondary schools; it is therefore *not* the total societal-level deciles based on all incomes in Denmark.) When pooling all families, the lowest income families (decile 1 = lowest, decile 10 = highest) attend school with an on average *lower* majority advantage. Moreover, there is also a 'fanning out' taking place, which means that the distance in school outcome between income groups is increasing over the time. Thus,

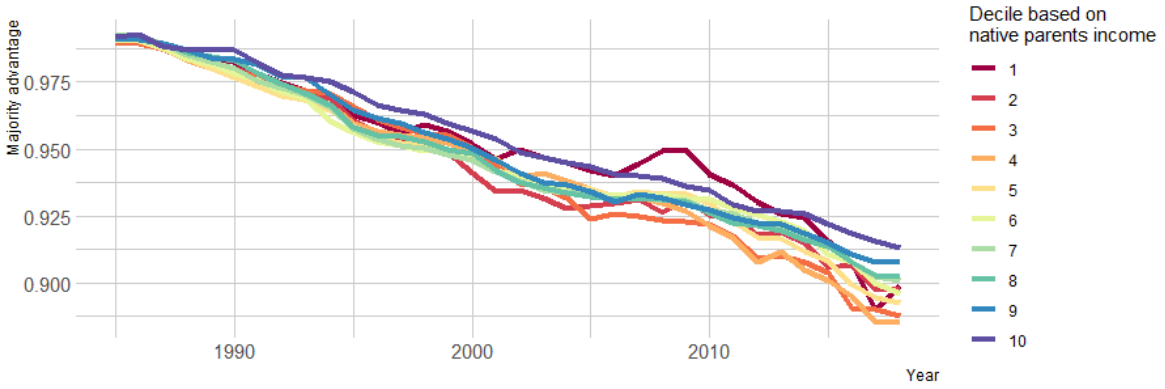
the higher the income, the higher the majority advantage of the school attended, on average. In 1995, the difference in school outcomes was around $p_i = .05$ while it in 2019 was almost doubled to $p_i \approx .1$. In other words, there are differences in the probability of intergroup contact differentiated on the income parameter. The explanation is straight forward and unsurprising; immigrant on average has a lower income than natives on a group level. The implication is a consolidation of economic status in heterogeneous schools, which might reflect negatively on the status of these schools. In other words, heterogeneous schools might be viewed as 'inferior,' not due only to the high presence of minority members but also due to the lower socio-economic status of the families in these schools.

Figure 5.13: School outcomes conditioned by income group



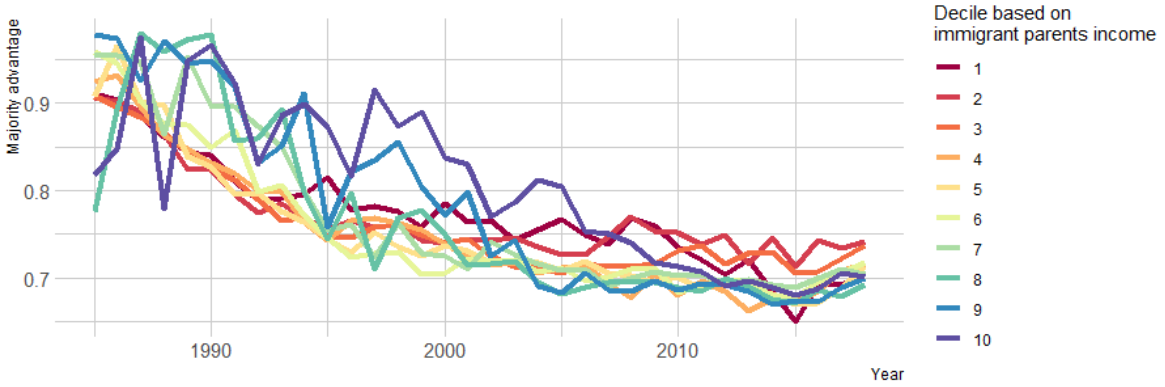
Though the differentiation shown in figure 5.11 is not surprising when considering the established fact that on a group level immigrant has a lower income than the native group and even if it is important to the consolidation of status differentiation between the schools with few and many immigrants, it is instead more interesting to look at school outcomes conditioned by income for natives in isolation. Figure 5.14 reveals an interesting trend in differentiated school outcomes between native income groups. Until 1995 there is no systematic differentiation in school outcomes, but from 2000 onward, there is starting a shift trending toward the lowest income groups (except decile 1 standing out) having a lower average majority advantage in school than the highest deciles – this differentiation is systematically manifested from 2015. Expressed differently, today, the low-income native families (below middle class, decile $5 - 6$) on average attend schools with lower majority advantage than the families in income groups above middle class. The status distance *within* the ingroup is therefore increasing based on the school outcome of the school attend – an observation expected to consolidate a negative status of schools with low(er) majority advantage.

Figure 5.14: School outcomes conditioned by income group (native families)



Finally, when looking at school outcomes conditioned by income for immigrants in isolation in figure 5.15, the picture is in broad terms the same but in reverse[3]. In 2019, the difference in outcomes on majority advantage is systematically varied above/under middle-class income families, with the highest earning immigrant families on average attending schools with *lower* majority advantage. Like for native – though less systematically – this differentiation is taking place from 2000 onward.

Figure 5.15: School outcomes conditioned by income group (immigrant families)



Lastly, once we can consider the difference in outcomes conditioned by income between public and private schools. Conceptualizing the difference between the type of schools as the 'mean decile group,' we see that in private schools, the mean decile group is $\approx .5$ decile higher than in public schools. In other words, more high-income families utilize the free school

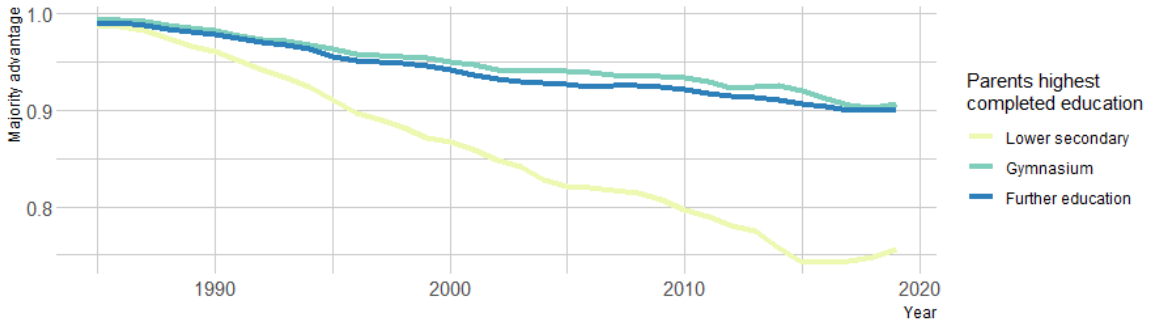
3. The 'outlying' nature in the trending of the average outcome of immigrants in decile $7-10$ until 2000 s due to numeric size of the immigrant population in these income groups and the very few immigrant families in these categories making the average vary without trend on a yearly basis.

choice and have chosen a private school alternative for their child. This is a difference that is most interesting when interpreted in relation to the increase in the number of private schools because it can indicate an increased sorting based on income between the two types of schools in that the average income in public schools is approximately the average overall income, while the average in private schools over the whole period is above this average – a systematic differentiation over time that might potentially reflect negative on the status of families and children who attend public school compared with – or by – those attending private schools.

5.4.2 Educational differentiation in school outcomes

Another parameter assumed to influence differentiation is the educational level of families. In 2019, children of low educated parents on average attended a school with a majority advantage degree of just over .75, while children of parents with more than a lower secondary education attend schools with an average majority advantage of $\approx$ .9 (see figure 5.16). To this, it should be noted that immigrants having an education from a foreign country do not have their highest education registered in the Danish registers. This differentiation is somewhat expected given the correlation of education and income, yet the differentiation is greater than immediately expected – particularly the increase in differentiation. An interpretation would be that more school options – what Esping-Andersen (1990) observed as a more differentiated demand on welfare services – could be a main driver in this differentiation; the most educated families seek out alternatives suiting their demands for their child. Or, more simply, that there are more educated people in the larger cities, and in particular neighborhoods within the city, determining the school options which indirectly results in differentiated outcomes for groups differentiated by level of education. Looking at heterogeneity, instead of majority advantage, the graph is almost identical; the lowest educated families attend schools with the lowest majority advantage (higher proportion immigrants).

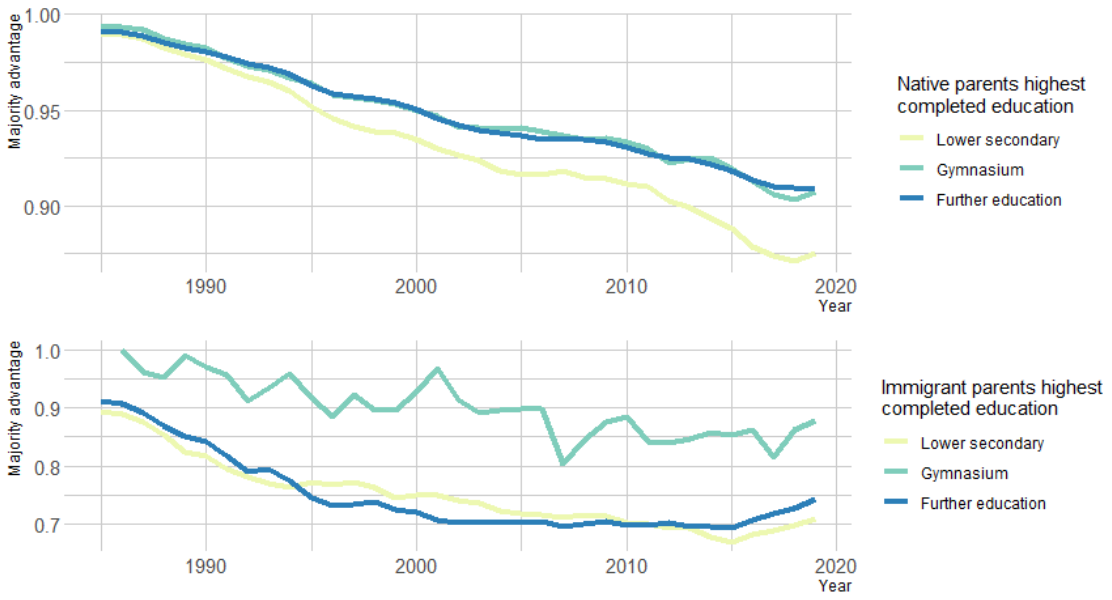
Figure 5.16: School outcomes conditioned by parents level of education



Source: Own figure based on restricted register data from Statistics Denmark (DST).

Looking at the difference between natives and immigrants in school outcomes conditioned by education, the difference is somewhat surprising. Consider figure 5.17, the difference between natives follows the pooled trend, albeit in a different magnitude. In other words, children from families with low educational attainment generally attend school with more immigrants than do the children of families with further education. This is not surprising when considering the differentiation in school outcomes conditioned by income, which show the same trend (cf. figure 5.14). Immigrant families, on the other hand, do not exhibit the same differentiation based on educational attainment. Over time, there is no systematic differentiation between the two educational groups (lower secondary and further education), in that it somewhat stabilized over time from 1995 onward[4]. From 2015, we observe a higher majority advantage in school outcomes for immigrant children across educational groups, corresponds with the so-called 'refugee crisis' in 2014-15. (Though generally, we should be more critical of the differentiation within the immigrant group in that there are no data on the parents educated abroad.) Interpreted, for immigrant families, income, not education constitutes a parameter determining differences in school outcomes – for natives, on the other hand, both education and income constitute a parameter, potentially due to a stronger correlation between education and income within this group.

Figure 5.17: School outcomes conditioned by parents level of education



Source: Own figure based on restricted register data from Statistics Denmark (DST).

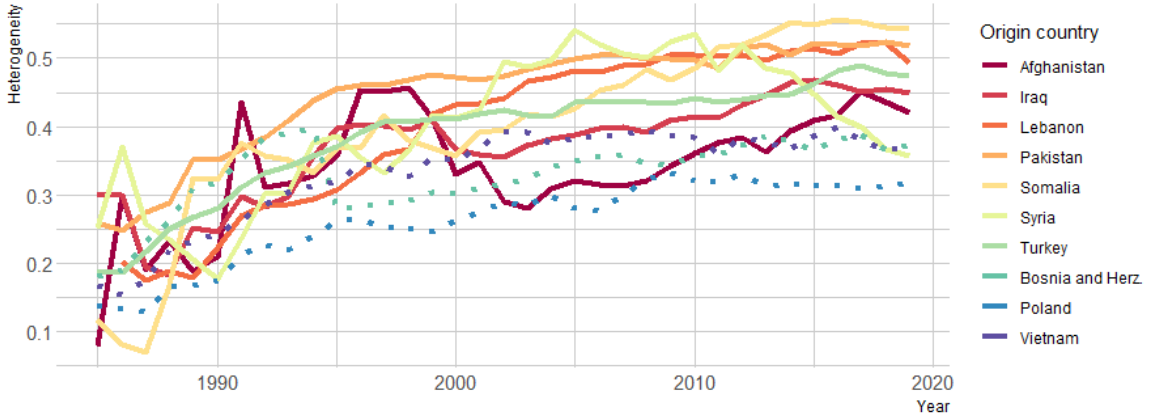
4. The 'wild' nature in the trending of the average outcome of immigrants parents with gymnasium as highest completed education is due to the few families in this category that are relatively small compared to those with less than a upper secondary education and those with further education.

5.4.3 Origin differentiation in school outcomes

A final parameter of interest is origin country, a weak proxy for ethnic affiliation. Focusing on the top ten origin countries (see figure 5.6) because these groups – in principle – are large enough to isolate themselves. Consider figure 5.18, showing the average heterogeneity of the ten origin countries over time. None stand out in the extreme, confirming the lack of schools defined by a singular ethnic composition (except, of course, 'pure' native schools). Nevertheless, Somali, Pakistani, and Lebanese immigrants are increasing their average migrant exposure consistently from 1985, which means they on average, over time as a group attend more heterogeneous schools. Since 2010, Somali immigrants have been the group on average most isolated from the minority. The notable decrease for the group of Syrian immigrants is most likely due to the large influx of refugees who, given their refugee status, have less of a choice in where to live and where to attend school.

In a two-group perspective (native-immigrants), measure of majority advantage (p_i) yield a corresponding graph, see figure 5.19. Nevertheless, in the two-group perspective, the interpretation translates to higher immigrant isolation of particular immigrant groups – the higher heterogeneity in school outcomes combined with lower minority advantage reveals that though the schools are not isolated based on a single nationality, some origin country group are being increasingly isolated from the majority in secondary schools. Even if the schools most isolated from the majority population are compromised by multiple immigrant groups, they are nevertheless isolated from natives.

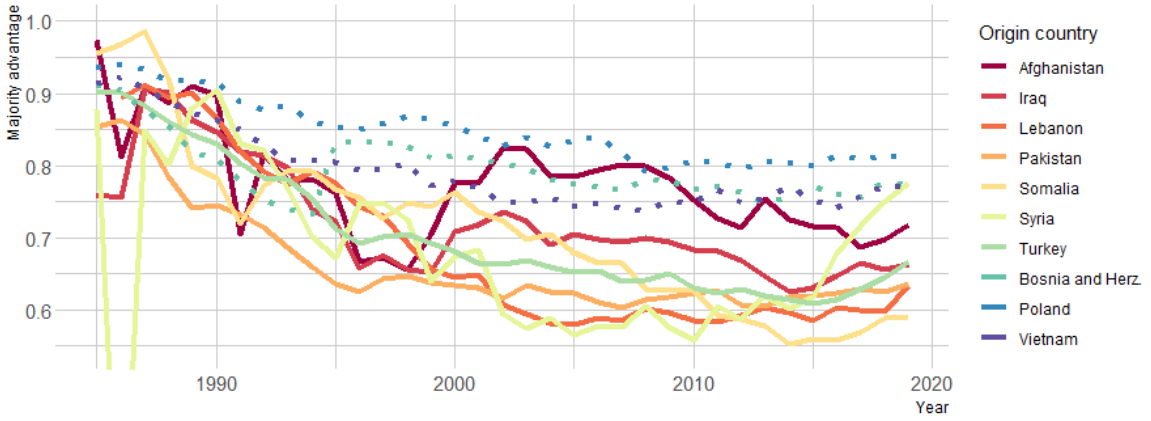
Figure 5.18: Average heterogeneity conditioned by origin country



Source: Own figure based on restricted register data from Statistics Denmark (DST).

Dotted line is countries not otherwise categorized as 'Muslim countries.

Figure 5.19: Average majority advantage conditioned by origin country



Source: Own figure based on restricted register data from Statistics Denmark (DST).

Dotted line represents countries not otherwise categorized as 'Muslim countries.

5.5 Separation and processes of segregation

As discussed in section 4.2, the Separation Index allows us to get a sense of the nature of segregation between groups in social space. From previous research, we know that immigrants, and particularly refugees, are becoming more evenly distributed among the 98 municipalities (Fjeldgaard 2020). This increasingly even distribution of refugees is by design in the municipal agreement of distribution of refugees which constrains the choice of refugees, and hence segregation is, as expected, decreasing. Yet, we do not see the same strong negative trend in separation of children in lower secondary school. In figure 5.20 we see the national level of segregation as measured by the Dissimilarity index of unevenness[5] compared with the

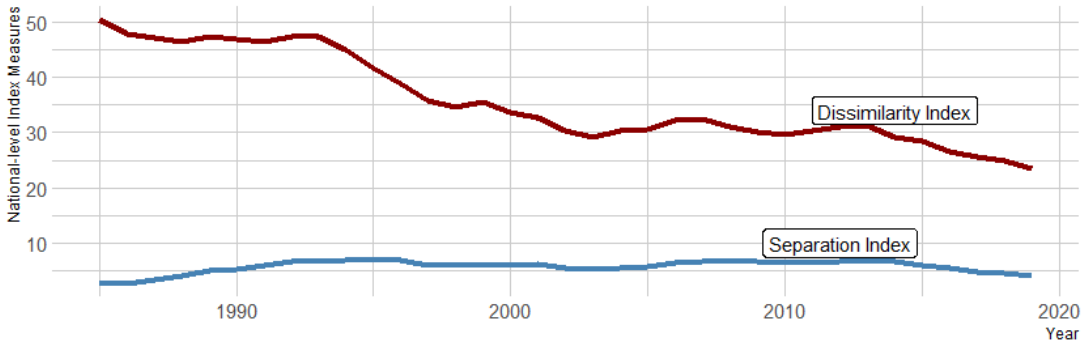
5. The Index of Dissimilarity (D) was suggested by by Duncan & Duncan in (1955) as a useful measure of *unevenness* and has remained highly influential when researchers chooses the index by which they attempt to describe levels of segregation. Later, Massey & Denton (1988) reinforced the popularity of D in their methodological paper in which they surveyed 20 indexes by which segregation can be measured. D is mathematically expresses as:

$$D = .5 \times \sum_{i=1}^{R} \left| \frac{n_2^i}{N_2} - \frac{n_1^i}{N_1} \right|$$

Where n_2^i is the count of group 2 (minority) members in subarea i, and N_2 is the count of group 2 (minority) members in the complete system of subareas (e.g., a municipality or a city). n_1^i and N_1 is count for group 1 (majority) members, .5 is a scaling constant. The calculation ignores signs, by taking the absolute value, $|\cdot|$. The interpretation of D is therefore the proportion of Group 2 members that would have to be 'moved' to achieve even distribution of Group 2 members among the units, i. In the case of school segregation in a given municipality, zero segregation is reached if all school, has a proportion of group 2 pupils, p_{2i}, equal to the total proportion of group 2 school-aged children, P_2 in the municipality: i.e., $p_{2i} = P_2$. *Unevenness* is thus realized when $p_{2i} \neq P_2$, i.e. schools have a proportion above or below parity. Without going into detail, the measure is deemed largely uninteresting in the analytic setting with an explicit sociological understanding on the effects of segregation on social integration (see Fossett (2017) for an indepth discussion).

Separation Index. What the measures show is that immigrant children in 8th and 9th grade are being more evenly distributed between municipalities and schools within the municipalities, meaning that in general the population growth in the municipalities with historically fewest immigrants is greater than that in municipalities with the historically largest immigrant population (Copenhagen for example have had negative growth in immigrant population size the latest years). What is not revealed in the Dissimilarity measure is that changes in concentration (of principally the natives) changes little between 1995 until 2014-15 with a large influx of refugees. In other words, we do not see immigrants and natives being separated into schools without the presence of the other groups despite the immigrant population increased in the municipalities which previously had few immigrants, which is also revealed in the decrease of public schools with 100% natives (cf. figure 5.3 and 5.4). As discussed in relation to figure 5.12, this might be because the immigrant population remains too small in absolute numeric conditions to start such separation processes in these municipalities.

Figure 5.20: National level of Separation and Dissimilarity

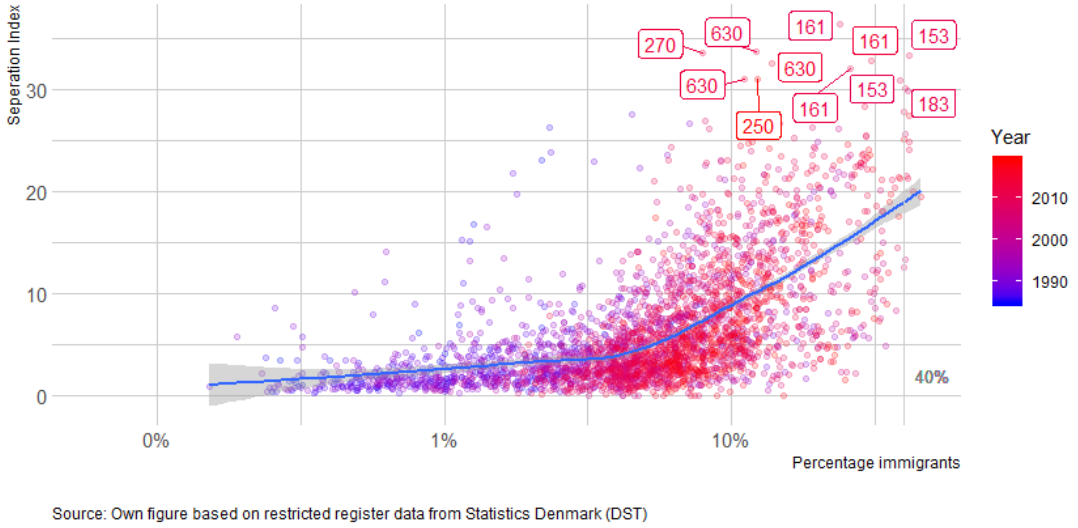


Source: Own figure based on restricted register data from Statistics Denmark (DST)

In the following, I will consider what 'municipal-level conditions' are a prerequisite for separation processes between schools generating what we would consider 'segregated' schools based on pooled ecological correlation. In figure 5.21, we see the pooled relation of the municipal-level measure of S and the municipal-level percentage of immigrants (log-10 scaled). Though we see a trend towards more separation in municipalities, particularly among those with a percentage of immigrant surpassing 15%, there is too great local variation in outcomes to talk of a conclusive correlation. Note instead the low degree of separation in the years before 1995 in most municipalities with only a few exceptions with $S > 10$ (or 0.1 depending on scale). Again the answer is found in the most simple explanation; numerical conditions

of the minority group do not make it possible for prototypical segregation to take place. The members of the minority do not have an alternative to attend schools in which natives predominate. Of the highlighted outliers, only two are neighboring Copenhagen: Brøndby (I.D.: 153) and Ishøj (183). Though all but Vejle (630) is located on Sjælland: Glostrup (161), Frederikssund (250), and Gribskov (630). Also note how all these outliers are observations from after 2010.

Figure 5.21: Correlation of S and proportion immigrants in municipalities

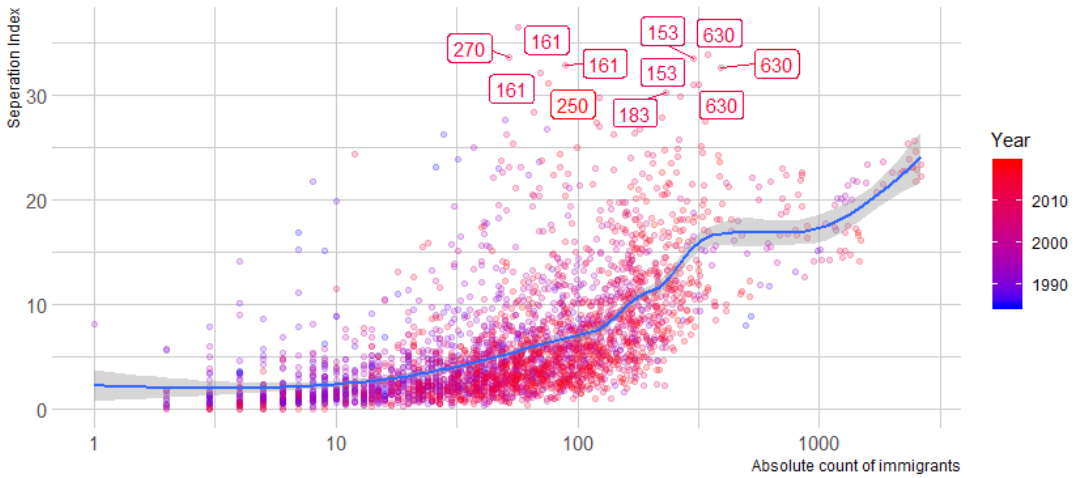


Source: Own figure based on restricted register data from Statistics Denmark (DST)

While we observed no clear indication of significant correlations in figure 5.21, a more interesting observation to the interpretation of the relation between separation and size is found when we instead plots absolute count against S (see figure 5.22). For the two municipalities with more than 1000 immigrants in secondary school (Copenhagen from 1995 onward, Aarhus from 2005 onward) we see a clear positive trend – the more immigrants in absolute numbers, the higher the measure of S. A trend which might not be surprising *per se* but it is nevertheless not a given but a result of processes of distribution between schools in the school landscape of the municipality. At the same time, we must not conclude too definitively on this, in that the local government or the local spaces of the municipality more broadly, could affect different levels of separation *over time*. Nevertheless, looking at the unpooled data for four selected years in figure 5.23, the correlation between S and size becomes just the more clear. Important to note, it is not simply a matter of immigrants attending schools with lower majority advantage; it is also natives attending schools with higher majority advantage – both groups are separating themselves from each other when S

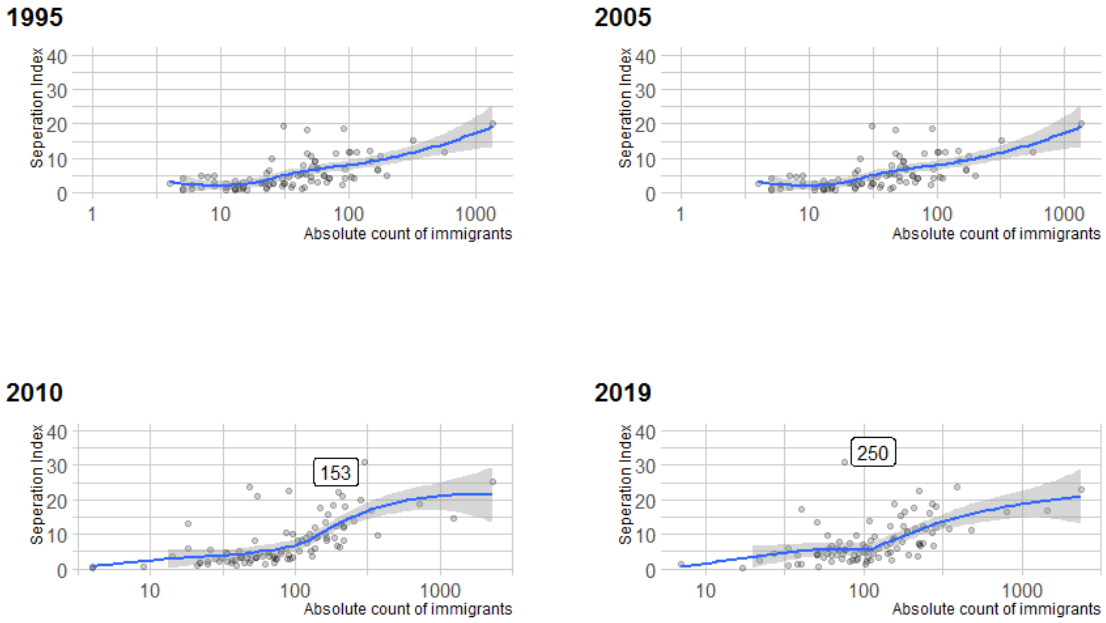
increases. What both of these figures confirm – yet again – is that size matters a great deal in contact opportunities and might work in paradoxical ways. Larger minority groups do not necessarily translate to greater migrant-native contact potential. Comparing 5.21 and 5.22, it is evident that *absolute size* matters more than *relative size*.

Figure 5.22: Correlation of S and absolute count of immigrants in municipalities



Source: Own figure based on restricted register data from Statistics Denmark (DST)

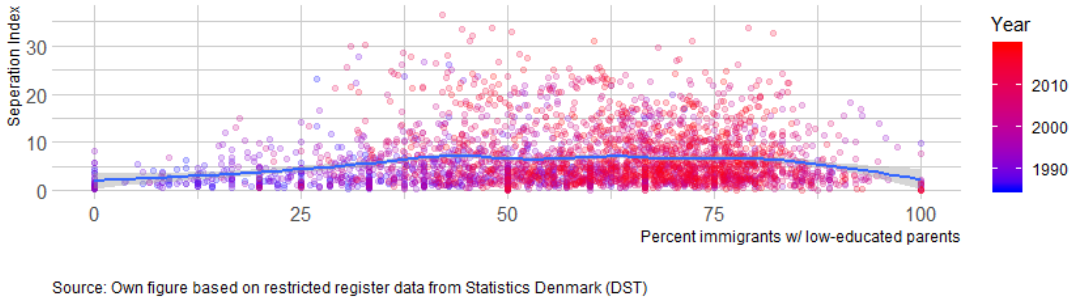
Figure 5.23: Yearly correlations of S and absolute count of immigrants in municipalities



Source: Own figure based on restricted register data from Statistics Denmark (DST)

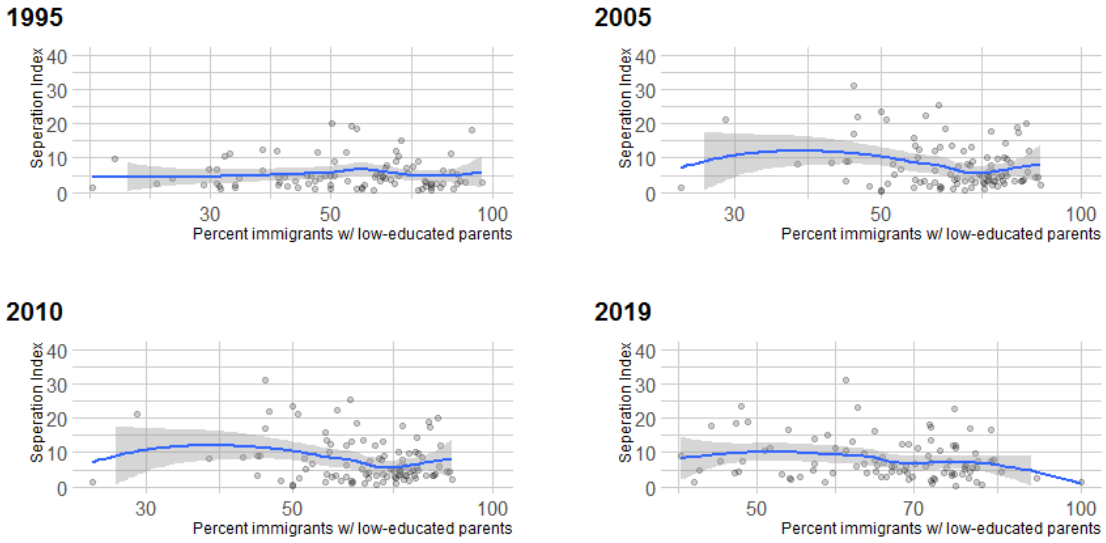
Looking at figure 5.23, size appears to be a defining structural parameter for the potential of separation and indirectly the contact potential at the local level. Yet, it would be meaningful to consider local aggregate differences that might further explain differences in separation processes at the municipal level since we, in the first part of the analysis, have seen how other parameters has an influence on group differences in school outcomes. Considering figure 5.23, it is evident that in the pooled data, there is no correlation between the percentage of the immigrant population who has a low degree of educational attainment and municipal-level measure of S. This is likewise the case in the unpooled correlation (see figure 5.25). Meaning that a high level of prototypical segregation in a municipality cannot be explained with the group-level degree of educational attainment – in other words, this is reconfirming the unsystematic group differences in school outcomes between immigrants based on educational attainment level described in figure 5.17.

Figure 5.24: Correlation of S and percentage of immigrants with low educated parents



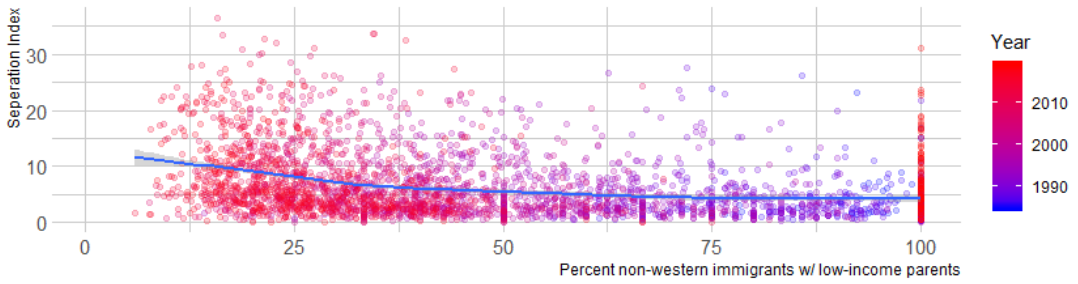
Source: Own figure based on restricted register data from Statistics Denmark (DST)

Figure 5.25: Yearly correlations of S and percentage of immigrants with low educated parents



Lastly, one might expect that the percentage of low income immigrant families (defined as decile 1,2, and 3) to influence separation at the municipal level given the systematic difference between decile groups found at the school level (see figure 5.13). Yet, as seen in figure 5.26, there is no ecological-level relation between percentage low-income immigrant families and degree of separation among schools at the municipal level. (Unpooled correlation, not shown, reveal the same lack of correlation.)

Figure 5.26: Correlation of S and percentage of low-income immigrant families



Source: Own figure based on restricted register data from Statistics Denmark (DST)

5.6 Defining structural parameters

As laid out in section 1, the aim of the analysis has been to utilize Blau's (1977b) macrosociology to describe the *potential of social integration in Danish institutionalized education*, on the assumption that social structures within this institutions either limit or expand possibility of intergroup contact – structures of opportunities that goes before individual preferences for such contact, or lack thereof.

Interpreted on a national scale, the data support previous findings that the potential of intergroup contact is trending positively. Immigrant are increasing becoming more 'optimally' distributed among municipalities in that the growth in the municipalities with historically few number of immigrants is relatively higher than the municipalities with a historically larger immigrant group. In the population at large, the probability of a random, casual, intergroup encounter was, in 2019, 25%, *all things equal*. Guided by Durkheim's notion of (*moral*) *density*, stating that people in dense – demographically and ecologically – communities or 'social spaces', here conceptualized as the school, are 'forced' to interact on a basis of equal status, the question has been whether structural conditions affect this probability of interaction for social groups on the municipal– and school-level. Demographically, minority groups and the aggregate immigrant-group has grown large enough to, in theory, attain social isolation. Intergroup contact is, therefore, not a given phenomenon because it interacts with complex processes of physical and social differentiation. The decrease in completely ingroup-isolated schools (i.e., a composition of solely native pupils) speaks to a realization of the contact potential through increasing intergroup exposure. On the other hand, previous research has, without looking into ethnicity as a parameter, found socio-economic differentiation in the distribution of children among schools (e.g., ROCKWOOL Fonden 2020). A different,

albeit somewhat similar, differentiation in school outcomes has been confirmed in present analysis with an acute focus on group-level difference between the majority ingroup and the minority outgroup of immigrant children. Writing on the backdrop of assumptions that the social position in society exerts a significant influence the patterns of intergroup associations, a myriad of variables could be considered in relation to the potential of social integration in the secondary school. I have restrained the analysis to the most fundamental variables, which has found empirical supports in other dimensions such as the friendship– and marriage-'market': Income, education, and ethnic affiliation. Before discussing whether these variables constitute a parameter of differentiation in school outcomes, I will first conclude on the differences in school outcomes as conditioned by ethnicity and in extension conclude on the most fundamental question Blau posed in his work: *how* does size matter (in the school landscape)?

5.6.1 Ethnicity and school outcomes

It is assumed that immigrant (minority) status has influenced the distribution of children among schools, conceptualized as *school outcomes*, and hypothesized that ethnic affiliation likewise might further affect this distribution. Expressed differently, if children are not sorted by schools based on ethnicity or other parameters, the school is a realization of multiform heterogeneity; the children have a mutual 'status' as being a pupil of school X giving them something in common, disregarding other group roles and social positions. A multiform heterogeneity which – in a contact perspective – optimally undermines barriers of social relations and ensure productive contact adhering to Allport's notions of optimal contact, and which in a perspective of social integration extend the network of the child out of the immediate ingroup to 'bridge' relations to other social groups.

Given the less skewed distribution of school outcomes over time (cf. figure 5.3) indicates that less schools are characterized by a lack of immigrant presence, realizing a potential of mutual exposure of immigrants and natives. On the other hand, despite a decrease in schools without any native pupils (a decrease that is ascribed to political decisions), there is an increase in schools with a proportion of immigrants over 50%, which suggest a sorting of children based on ethnicity – either as a results of immigrants seeking schools with a prior presence of immigrants or natives avoiding these schools. Neither of the two processes should be observed if ethnicity were not a parameter, but without micro-level analysis, neither of the two suggestions can be confirmed. We also observe a time effect evident in the increase in average heterogeneity over time (cf. figure 5.9). Particular the year 1995 appear to be a 'turning point' in the differentiation processes between natives and immigrants (cf. sec. 5.6.3).

Based on measures of heterogeneity it is evident that there is no minority isolation based on singular ethnic affiliations in Denmark – but there is an indication that children of 'Muslim countries' (looking only at the top 10 largest groups) generally is more likely to attend a school

with a high minority advantage (p_j) (cf. figure 5.19). Meaning the salience of immigrant status has a stronger effect on differentiation in school outcomes for some particular ethnic groups; particular Somali, Pakistani, and Lebanese immigrants. Even if a school is characterized by many ethnic subgroups, a lack of native presence is retarding the societal level intergroup contact potential between the two groups of interest; natives and immigrants. Focusing on the increase in schools with 60+ immigrants, resulting in higher municipal-level measures of separation (S) by 'attracting' immigrants which otherwise would have attend a school with a higher minority advantage (and in turn lowered the majority advantage of that school), ethnicity is concluded to be a parameter because immigrants on average has more ingroup exposure than what would be expected in a situation with no processes of differentiation – without suggesting whether the main driver is immigrants seeking isolation, or natives avoiding schools with a visible presence of immigrants. Either suggestion might well be making a misinterpration based on an individualistic fallacy (Merton 1938) due to the *salience* of immigrant status as a parameter in differentiation is – partly, at least – locally mediated, most notable in the outlying municipalities on the measure of S. Though local politics and local culture might account for some of these local difference, *size* is the best and most obvious explanation of the differences in school outcomes between municipalities.

5.6.2 Density

The demographic changes – or the new numeric conditions – are defining for the limits of the potential contact opportunities as defined in section 3.3.1. In the years around 1995, we start to observe a median heterogeneity between municipalities at $1 - \lambda = .1$ and around $1 - \lambda = .2$ in 2019. At the same time, some municipalities have measures as high as $1 - \lambda = .6$, i.e., a 60% probability of a random intergroup encounter, all things equal. In other words, before 1995, natives have little potential of intergroup contact as a result of the relative size between the two population. This potential has steadily risen up until today – with some municipalities having a population composition making outgroup encounters more likely than ingroup encounters, all things equal. Yet, as discussed in section 3.3.2, relative group sizes might work in paradoxical ways; if the minority group becomes large enough, separation of groups – i.e., lower potential of intergroup contact – might *increase*, because the minority based on sheer numbers can become 'socially self-sufficient'. The appearance of minority-isolated schools from 2000 onward confirms this to a degree, meaning that the high potential of intergroup is not perfectly realized due to sorting process – i.e., structures – of children between schools.

Ecological correlations likewise show *size* to be the only of the considered parameters to explain processes of separation and locally conditioned differences in intergroup potential – showing *absolute* size to be a better indicator than *relative* size. Schools with high minority advantage ($> 60\%$), for example, only exist as a repeating and continious phenomenon in the three largest municipalities, and only appear when the minority population (8^{th} and

9^{th} grade) size reach certain numeric conditions (around 1,000). As remarked earlier, for minority isolation to be realized on the school-level, there need to both a large enough minority population and enough schools; and count of schools follow absolute size closely ($r = .95$). If the group is either too small in absolute numbers, or the school landscape is made up of relatively few, but large, schools, children of different groups are 'forced' to attend school together. (Recall the increase in number of schools and decrease in school size presented in sec. 5.1.) However obvious these observations might be, they nevertheless confirms Blau's (1977a, 35) theorems and axioms on the significance of numbers for social life. More importantly, by being empirically supported, the notions of how size matters need not rely on a logically derived notion of how it should matter. It is also an interesting contribution in light of the ideas formulated in 'classic sociology'. Durkheim's notion of social differentiation as conditioned by population size and concentration find support – yet, at the same time, in a setting of the school, this differentiation do not translate to increasing exposure and potential intergroup contact, because exposure do not happen *across* but *within* schools. Hence, *segmentation* rather than differentation might be a better description in this particular context up against Durkheim's theory, because there is contours of a 'tipping point' in size and concentration retarding exposure due to differentiation rather than increasing exposure and contact. In other words, the notion of *moral density* stating that increasing contact and interaction in complex societies depend on population size and ecological concentration is only valid up to certain numeric conditions after which contact and interaction, paradoxically, is reduced, as Blau (1974) argued. This does not necessarily disqualify Simmel (1950)'s observation that density is a central component in the phenomenon of *cross-cutting of social circles*, if ethnicity does not consolidate other inequality (graduate) parameters. It also, albeit in particular ways he might not have argued, confirms Wirth (1938)'s observation that size of populations, density of settlement, and degree of heterogeneity influences social life, by effecting school outcomes and contact opportunities which, based on previous research (cf. sec. 1.2), is assumed to matter in terms of life chances and outgroup sentiment later in life.

The interpretation of processes is another matter. It was previous argued that minority isolation will emerge under sufficient numeric conditions because sheer numbers make it economically feasible to finance private schools oriented towards minorities. Alternatively, and more structurally determined, residential segregation processes on the housing market might result in minorities being concentrated in physical space around particular schools. Throughout the analysis, 1995 is highlighted as a year marking a turning-point in migrant-native differentiation in the school landscape. The year falls closely to the, at the time highly debated, first integration law of 1998. The law manifested a 'fair' distribution of refugees between municipalities based on current numbers of refugees, as mentioned earlier, and more importantly, it placed the responcibility of the integration process of immigrant at the municipal-level local government. A placement of responcibility which might be an

explanation to the large differences in measures of S (cf. figure 5.21 and 5.22). Whatever the *process*, a general conclusion is that integration (as defined in sec. 3.3.2) is an 'easier' process when numbers are low.

5.6.3 Consolidaton

The empirical question for the analysis has been whether this social distance on group-level is reflected in differences in school outcomes – a reflection Blau (1977a) referred to as *consolidation* of nominal and graduate parameters. Looking at 'type of school' as a potential nominal parameter, the data show conclusively a difference in 'average decile' group of the two types of school (public, private) of .5 decile – with private schools on average having more children of parents in the higher deciles (i.e., higher incomes). In a critical perspective, this difference can be problematic if it results in public schools is viewed as 'inferior' in status terms by being viewed as a place for 'low income families' by those in private school. This is not an extreme which is immediately apparent in a Danish case, but the development in consolidation between income and type of school is important to give further and future attention. An obvious interpretation of the difference would be in line with what other has observed before (Klitgaard, Nørgaard, and Petersen 2006; Barsø 2010a, 2010b; Esping-Andersen 1990): Some families, particular the families of high socio-economic status, are seeking alternatives to the 'standard' offered by the welfare state. On the ground of present analysis there is no basis to evaluate how 'problematic' this differentiation is in light of a democratic ideal – should the difference increase further though, we would observe what would be considered a consolidation between income (socio-economic status parameter) and type of school (nominal group parameter) reflecting a two-part welfare system where the wealthy chooses private alternative and the 'poor' rely on public alternatives (Esping-Andersen 1990). Another side of the differentiation based on type of school is the observation that the distribution in school outcomes are more skewed among private schools than among public schools. Meaning that there are more private schools with high or complete majority advantage (i.e., schools with no intergroup exposure and contact potential). Yet, at the same time, there are also more private schools with complete minority advantage than there are public schools. In line with the discussion on density, an interpretation to the differentiation in both income and school outcomes is that the increase in private schools in the Danish school market has made possible for families of high(er) socio-economic status to realize what Esping-Andersen (1990) observed as a more differentiated demand on welfare services. Alternatively, as mentioned (cf. sec. 5.4.2), another possible explanation could be that immigrant are physically concentrated within the city in which there is a lack of private school alternatives.

Another indication of consolidation between migrants and natives is the concentration of status resources (Blau 1977a, 1974) conditioned by school outcomes. As shown throughout

the analysis (sec. 5.4.1 and 5.4.2), school outcomes is systematically differentiated conditioned by decile group across migrants and natives; the lowest income families on average attend school with a *lower* majority advantage. Interestingly, over time, there is a 'fanning out' effect (cf. figure 5.13), meaning that the difference in school outcome between the lowest and highest income groups is *increasing*. Not surprising given the observation that immigrant families on average has lower income than native families, nevertheless, the implication can be a consolidation of negative status of schools with low majority advantage. In other words, heterogeneous schools might be viewed as 'inferior', due not to the high presence of immigrants in isolation but due to the consolidation of lower socio-economic status of the heterogeneous school – however 'unfair' this generalization might be. More important is the difference in school outcomes conditioned by nominal migrant/native-group. Looking at the native families, until 1995, there is no systematic difference in school outcomes between income-groups, explained by the size of the immigrant population. After 1995, we see the contours of a status differentiation between the lowest and the highest income-groups among natives, where those of the lowest income are more likely to attend school with immigrants than are the highest income natives. An observation we would expect to consolidate the negative status of schools with low(er) majority advantage. Interestingly, when looking at immigrant families, the difference is opposite; the immigrant families with the highest incomes on average attend schools with *lower* majority advantage. This suggest that 'isolation' take resources, because for this differentiation to take place families will have to spend some of these resource (economic or otherwise) to choose another school than the 'default', resulting in these patterns of association we observe. Another status resource is educational attainment. For 2019, we observe that the families with the lowest educational attainment are more likely to attend schools with low majority advantage. Somewhat expected due to the correlation of educational attainment and income, yet again it might consolidate a negative status of schools with low degrees of majority advantage and further this differentiation we already see over time. More interesting is it that for immigrant families, there is no real differentiation based on educational attainment alone – meaning that for immigrant, based on this data, income, not education, is the only structural parameter defining school outcomes. For natives, both income and education is a structural parameter; though the relative effect of either has not been isolated in present analysis.

To conclude, in the context of Denmark we see concentration of resources at types of schools based on the majority advantage of the school. For natives, both economic and educational resources is being increasingly concentrated in school with high majority advantage. For immigrants, economic resources is being increasingly concentrated in schools with lower majority advantage. Meaning that there are structural 'sorting mechanisms' in the Danish school landscape. Though the concentration for either groups is not expressions of outright *polarization*, the worst case interpretation would be that we are observing the contours of polarization due to the historical trending group-level differentiation of

socio-economic parameters. At the same time, the optimistic view from the historical perspective is less and less schools in the Danish school landscape have no immigrant pupils; hence, though it happens in an uneven paces across municipalities, due to the social structure delineated by socio-economic parameters, the intergroup exposure *is* increasing across most schools in Denmark. Yet, we see that it is systematically the native as well as the immigrants members of lowest socio-economic status being introduced to the highest potential intergroup exposure and potential intergroup contact within institutionalized education, while the native and immigrant children of the highest socio-economic status increasingly is being sorted into school with their respective ingroup advantage.

6 | Conclusion

In 2008, Damm, Schultz-Nielsen, and Tranæs (2008) published a report named *The separation of a population?* (da.: En befolkning deler sig op?), concluding that, overall, the population is not being increasingly residential separated on an ethnicity parameter. A finding which has been confirmed in newer research (Andersen 2015). Posing the question: '*To what extend have native and immigrant children been exposed to each other in Danish lower secondary schools in the years 1985-2019?*', I have dealt with a similar question on the state of separation between two groups in society, but in a particular institution of the welfare state which is not immediately comparable with processes of residential segregation. Finding that fewer schools are characterized by a complete absence of migrant children, decreasing from 900 schools in 1990 to 401 in 2019 – a decrease following in pace with an increasing immigrant population that cannot be attributed to a lower school count in the school landscape.

From a contact perspective, this means that the absolute degree of migrant-native intergroup exposure has *increased* over the years 1985-2019. Therefore, fewer native-isolated schools speak to a realization of the increasing intergroup contact potential following the increasing size of the immigrant population, making them more 'available' for the natives on large scales. Expressed differently, new numeric conditions of the population have changed the structural patterns of both *possible* and *potential* intergroup associations by creating new school outcomes – particularly after 1995, the numeric conditions have realized higher overall intergroup exposure. However, even though overall intergroup exposure has increased, we also observe more schools where migrant children are the majority. A separation we should not observe if there had been an absence of structural sorting mechanisms in the school landscape, given the still relatively small size of the immigrant population. Therefore, intergroup exposure is not a given phenomenon simply because of immigrants' inflows if it interacts with processes of physical and social differentiation.

A structural factor making this differentiation and sorting of groups possible is the growth in private schools and the lower school size we observe over time. Hence, the school landscape is becoming less *dense* in terms of the schools' size, making it feasible to choose schools serving pupil composition preferences. Moreover, the analysis has shown that the salience of immigrant status (or the ethnic affiliation) is stronger for some immigrant groups; particular Somali, Pakistani, and Lebanese immigrants are becoming increasingly likely to attend school

with other immigrants over time. A consistent finding in the analysis is the somewhat paradoxical working of numeric conditions on a group-level. When the size of the immigrant group in a municipality increases over time, we do not necessarily observe a continuous increase in intergroup exposure. Instead, a larger immigrant population *lowers* the potential of intergroup exposure and contact due to separation processes being realized when the immigrant population is 'large enough'. This process is observed in the appearance of schools in which migrant pupils are the majority from 2000 onward. Meaning that the potential of intergroup exposure following increasing inflow of migrants might only be realized to a certain point, after which the potential of exposure starts to decrease due to higher degrees of segregation in the school landscape. For separation processes, *absolute* size is found to be a better indicator than *relative* size. Therefore, there is an indication of a 'tipping point' – or 'critical mass' – in the size and concentration of the immigrant population, after which exposure is decreasing due to differentiation instead of increasing exposure and contact as would logically be expected to follow a larger population.

Defining for the (contact–)opportunity structure in the secondary school is the systematic differentiation in school outcomes conditioned by income-group. From a time perspective, there is an increasing difference between the economic status of families attending schools with respectively high and low proportions of immigrants; the schools with a high proportion of immigrants being consolidated by low economic status families. For native families, there is a lower probability of attending schools with high immigrant (outgroup) exposure if the parents' income is 'above middle-class' earnings. Somewhat surprising, the opposite is the case of immigrant families; families with above middle-class earnings are more likely to attend a school with high immigrant (ingroup) exposure – suggesting that 'isolation' takes resources (economic or otherwise). On the structural parameters for exposure, the analysis finds that income, not education, is the defining parameter for group-level school outcomes for immigrant families (though missing educational data might explain the 'lack' of differentiation within the immigrant group on this parameter). In comparison, both income and education are structural parameters for the native group. In conclusion, patterns of *potential* intergroup contact are taking form in the Danish school landscape, delineated by fundamental structural parameters (ethnicity, income, and education) and structural conditions in the population (size and distribution).

In the report, it has been argued that the heterogeneity of schools (and school segregation more broadly) is an indicator of social integration at the societal level because this measure reveals whether a central institution in the welfare state acts as a space to bring socially distant people together in a space enabling positive contact effects (Pettigrew 1998) and thereby reduce group-level social distances in society. What is observed is that structural patterns of potential intergroup contact are taking shape in the Danish school landscape. An empirical observation in support of Blau's key idea, that structurally differentiated positions (here based on ethnicity, income, and education) influence patterns of association (Blau

1977b). Structural positions that differentiate likelihood, or degree, of intergroup exposure on a group-level. From a social integration perspective, this is of utmost importance because, as Blau define it, frequency of intergroup contact and associations are key to integrate the various segments of society; more important so than common values and national identity (Blau 1974, 620–21, 1977b, 2, 21; Blau and Schwartz 1984, 20). Likewise, it is essential in light of Allport's (1954) ideas, which saw high intergroup contact frequencies as paramount to reduce negative group-based prejudice and stereotypes. On these assumptions, the school holds potential as a mechanism of societal level integration because, as Simmel noted, contact with persons outside one's ingroup can '*broaden people's horizons, promote tolerance, and stimulate intellectual endavors*' (Blau 1977a, 36). However, the structures conditioning likelihood of intergroup relations, as described above, makes this potential of the school as a 'machine of integration' not fully realized – and the trend, as shown in the analysis, is towards a lower realization of this potential. Therefore, if social integration is defined in terms of intensity, not intimacy, of intergroup contact, the trends in group-level differences are of concern. The question will be how enduring these structures will remain over time; will they endure and strengthen or wither, as new people are being introduced into the nation state; will it take political action to change these structures?

Moreover, it remains an empirical question whether these observations in a Danish context represent either 'a special case' or whether these structures' influences are 'strong' in a comparative perspective. Despite a continuous increase in the immigrant population, the pool of immigrants remains small compared with other nation states, and when new numerical conditions manifest in pace with continued immigration, Denmark might face new challenges – challenges faced by other nations with a longer history of immigration. Whatever will be the case, what this analysis strongly indicates is that the process of social integration is 'easier' when numbers are small.

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