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Discrimination and Daycare Choice: Evidence from a Randomized Survey

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Abstract

We use a randomized survey to study how discrimination affects parenting choices. In our survey, parents with young children choose between two public daycares, which are described by testimonials from other (fictitious) parents. The testifying parents in the first daycare describe a free play institution, which reflects a pro-typical Scandinavian 'permissive parenting' approach to childcare. The testifying parents in the second daycare describe a more structured daycare, which reflects an alternative approach to child care that is broadly consistent with 'paternalistic parenting'. We randomize the fictitious names of the testifying parents across respondents. We find bias against ethnic minorities among parents who prefer a structured child care institution but not among parents who prefer free play one. These biases are not reduced when we provide additional information on testifiers' professions. Our findings offer validation for a model of parenting where biases regarding discrimination are likely to come from parents preferring less permissive/more authoritarian methods of parenting.

JEL codes: D15, D63, J15, I24.

Keywords: Discrimination, survey experiment, parenting style, daycare choice.

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I. Introduction

The general concerns parents have about their immediate community can play an important role in determining fundamental parenting choices. Doepke, Sorrenti, and Zilibotti (2019) argue that neighborhood choices directly relate to parenting styles. For example, parents may be more authoritarian in response to a social environment perceived as more risky or less inspiring for children. Moreover, parents devote considerable time, energy, and resources to choosing a good school for their offspring, and recent research documents that the ethnic composition of schools contributes to their decision (Karsten, Ledoux, Roeleveld, Felix, & Elshof, 2003; Kristen, 2008; Söderström & Uusitalo, 2010; Rangvid, 2010).[1] In this paper, we consider whether an important source of perceived risks associated with the social environment stems from concerns parents may have about the presence of minorities in daycares. We study the relationship between parenting styles and attitudes toward ethnic minorities in a daycare setting and show that parents with preferences for more structured child care institutions are most responsive to ethnic minorities in a daycare.

Our study contributes to the understanding of school choice, and in particular to the understanding of how parental tastes for daycare pedagogy are related to parental preferences for peers in daycares. To achieve our goal, we designed an online experiment in the form of a randomized survey, which we gave to the parents of young children in the City of Copenhagen.[2] Our randomized online survey was administered by Statistics Denmark (the Danish National Statistical Office) in 2014 to 2,494 parents of newborn children in Copenhagen. As part of the survey, parents were asked to choose from two distinct types of daycares with differing degrees of formally structured activities.[3] The descriptions of each of the two daycares were given in the form of three testimonials from (fictitious) parents whose child allegedly attended the daycare. While one daycare was associated with a free-play pedagogical profile, the other was depicted as a more structured type of daycare with scheduled educational activities.[4] The first pedagogy was described by three positive testimonials that were designed to capture the traditional 'Scandinavian' permissive approach to childcare. (Not surprisingly, 75 percent of the parents in our sample, selected this pedagogy.) The second pedagogy was described by another set of positive testimonials that were meant to capture methods of childcare that are much more structured and disciplined, which would generally serve more paternalistic styles of parenting. Given that our study was in Scandinavia, these positive testimonials were not nearly as popular as the alternative permissive childcare option.

To all the testifying (fictitious) parents, we assigned six names of which five were traditional Danish names and one was a Muslim name.[5] To detect bias against ethnic minorities, we randomized the names of the testifying parents across the treatments such that in some institutions all the testifiers had typical "Danish" names, while in others, one of the testifiers' names was associated with ethnic minorities. Randomization of these names was our method to isolate the parent's preference for pedagogy from the parent's preference for avoiding a minority. Furthermore, to check whether ethnic bias depends on respondents' expectations about minority testifier's educational background, in some treatments parents also received information about the profession of the alleged testifying parents. The survey is described in more detail in section 2.

Our results reveal that parental choices change if an ethnic minority name appears in the testimonial for daycares. This result is more pronounced if the minority name appears in a testimonial for the structured daycare. In this situation, the probability of selecting the structured daycare is lower. These results suggest that parents who prefer the structured daycare type display biased attitudes against minorities. We further find that our results are not affected when information in testimonials on testifiers' professions (implying high levels of education) is provided. Given that a high skilled profession is an indication of well-educated parents, which is often highly correlated with many variables that are important for daycare decision, one might expect that including the profession in the testimonials presented in our survey would reduce discriminatory attitudes. However, this was not the case in our study. To help interpret the results from our experiment and situate our results in the literature, we develop a simple model based on the work of Doepke and Zilibotti (2017) on parenting styles. Our model, taken together with our empirical results, suggests that parents' discriminatory attitudes towards ethnic minorities are more likely to be found in parents with a paternalistic preference. Using data from European Values Survey, we confirm that preferences for a more paternalistic parenting style are positively associated with a distaste for having ethnic minorities as neighbors.

Our contribution is noteworthy in several ways. First, while real life data on school choice are often contaminated with many traits that are not under researchers' control, we avoid this problem because our survey design explicitly controlled the information provided to the parents through randomization. For instance, in an uncontrolled setting, parents may know that schools

in districts with a high proportion of ethnic minorities are of low quality (while the same information is not necessarily available to researchers).[6] In that case, parents' avoidance of such schools should not be attributed to discrimination. In our survey, however, only the ethnic composition of the daycares is exogenously varied while keeping everything else constant. Moreover, if parents associate low quality with ethnic diversity, then it is still a form of discrimination (statistical). While many controlled experiments suffer from external validity issues, we link our survey data to the census data and show that the choices made in our survey are consistent with real-world choices outside of our survey.

Second, we contribute to the current literature on discrimination using randomized surveys in economics by adding the dimension of institutions (i.e., daycares) rather than individuals. While early theoretical studies in economics categorize discrimination into two types: statistical and taste-based (Becker, 1957; Phelps, 1972; Arrow, 1973; Arrow, 1998), only recently randomized controlled trials documented the existence of discrimination among individuals and attempted to separate the type (Bertrand and Duflo, 2017). Our study is the first randomized survey to look at parental tastes toward diverse daycares, and we find bias against ethnically diverse daycares among parents who prefer a specific type of daycare.

Third, our study helps to further understand the current ethnic sorting at schools and the intergenerational transmission of discriminatory attitudes. Our findings show that parents who prefer more structured teaching style might be more discriminatory against ethnic minority and choose less diverse daycares, exposing their children less to ethnic minority. Exposure to diversity, or intergroup contact, plays an important role for tolerance and reduces bias toward ethnic minorities (first, argued by Allport, 1954; more recently empirically supported by Boisjoly et al. 2006; Dobbie and Fryer 2015; Carell et al. 2016). Because children are sorted into different daycares by their parents' discriminatory attitudes and parenting style, discriminatory attitudes and segregation might create a self-perpetuating cycle in which one reinforces the other.

Finally, asymmetric response from parents in the form of discriminatory tastes has implications for the design of school choice policies. Many European countries struggle to find a school assignment system that balances both parental preferences and the societal goal of reducing socioeconomic inequalities and ethnic clustering. The nature of the survey and its conclusions are of interest to municipalities and local governments that have to balance the

sometimes-conflicting objectives of social integration and to offer diverse daycare options and free parental choices.

II. Institutional Setting, Data, and Experimental Design

A. Institutional setting: daycares and daycare choice

Danish municipalities provide heavily subsidized universal daycare to all children between the ages of 0 and 6: nursery centers for 0 to 3-years-olds and preschools for 3 to 6-years-olds. Some daycares provide both a nursery and preschool; usually in separate divisions (Gørtz, 2012; Gørtz & Andersson, 2013). Public daycare is highly subsidized: parents pay 20-30% of the full cost of daycare with the exact percentage varying across municipalities. All daycares within a municipality charge the same fee, and families with income below a certain threshold receive free daycare service. The staff in both nurseries and preschools consists of trained teachers and assistants; more than half of the staff members hold a bachelor's degree in pedagogy, while the rest are assistant pedagogues with some formal training.[7] Around one in ten staff members is male.

Each municipality is responsible for the allocation of slots in its subsidized daycare institutions. The allocation rules differ across municipalities, but all parents who want a spot in a daycare for their young child must first submit a list of preferred daycares. More popular daycares have waiting lists, and open slots are distributed to children almost solely according to date of birth. The municipality administers the final allocation based on the waiting lists. Denmark has the highest daycare participation rate among the 0 to3-year-olds in Europe; around 2 out of 3 children in this age group were enrolled in subsidized formal childcare in 2014 (OECD, 2018). All subsidized daycare arrangements are subject to municipal supervision. Danish daycare institutions are generally considered to be of high quality (Bauchmüller et al., 2014; Esping-Andersen et al., 2012; Datta Gupta & Simonsen, 2010; Gørtz et al., 2018). They follow the Scandinavian pedagogical philosophy, which is child-centered and focuses on socialization rather than the development of early academic skills. The program stresses the importance of learning through play, creativity, social inclusion, outdoor activities, parental involvement, language development, nutrition, and physical exercise. Despite these common elements in the overall pedagogical approach, there is variation among daycares in

terms of their pedagogical focus. While some daycares favor outdoor activities, others focus more on creative skills and musical activities. Daycares post their learning plan, pedagogical approach, and information on general activities on their websites. Parents use this information when filling out their list of preferred daycare institutions.

B. Data

The data used in this paper are from the Copenhagen Daycare Survey, which we constructed and collected for the project. The survey provides information on preferences and choices of parents who are in the process of enrolling their young children for the first time in daycare in Copenhagen. The survey was carried out by Statistics Denmark in the summer of 2015 among a sample of 5,000 randomly drawn households in Copenhagen with children born in 2014. The survey, which was web-based, was sent to the household, and either parent could fill it out.[8] Out of the 5,000 households, 2,494 responded, translating into a response rate of almost 50 percent. The survey consisted of a broad battery of questions related to which daycares in Copenhagen the parents had or would sign their child up to, what characteristics of daycares that the parents considered to be important for that choice, and how parents weighed quality in daycares, e.g., compared to their need to return to work. The empirical analysis in this paper focuses on a particular question in the survey in which parents were asked to state their preference relative to two distinct daycare institutions that each represent some typical characteristics of Danish daycares.[9]

We later merged the survey data with administrative register data in Statistics Denmark to obtain background information such as education, employment situation, and income for parents in the survey. It was possible to link 2,179 survey respondents who had answered our key question for this paper to relevant socioeconomic register information. This group, who thus responded to the key question and for whom we have a full set of relevant controls (including key demographic information on both parents of the child), makes up our main sample. The gender distribution of children in the completed survey is divided almost equally. The age of the children ranges from 7 to 19 months at the time of the survey, with a mean age of 13 months.

It is possible to link 4,885 out of the entire sample of 5,000 individuals that were initially drawn from Statistics Denmark's registers to background information in the registers. Thus, we are able to compare the socioeconomic background of parents who completed the questionnaire with that of the entire sample of randomly selected parents (see Table A1 of the Appendix). On average, the parents who completed the questionnaire (shown in columns 1-2) are more educated and more likely to be employed than the average parents in the total sample. In addition, they are slightly more likely to be living in a nuclear family and consequently less likely to be single parents.[10] Ethnic minority parents are slightly underrepresented, which is a well-known pattern from other surveys. However, all groups are represented in the survey, and differences in socioeconomic indicators across respondents and non-respondents are not overly large.

The possibility to link survey and register data also allowed us to carefully compare some of the responses given in the survey to actual choices of daycares. It was possible to link almost all the survey respondents to the register data. Moreover, we obtained access to administrative records on daycare waiting lists and assignment in Copenhagen. In section 5, we verify some of the statements regarding choices of daycares that were put forward in the survey with the actual waitlist data from the municipality administration regarding preferences for daycares.

C. Preferences for daycare type and experimental design

Our key question concerns parental preferences for two distinct types of daycare institutions. The survey asked parents to choose between two distinct daycares; daycare A and daycare B. Henceforth, we mainly refer to A as the "structured" daycare and B as the "free-play" daycare for convenience, although the questionnaire did not present these terms to the parents. Parents were given a description of the daycares in the form of testimonials from parents whose child attended that daycare. The questionnaire informed respondents that the daycares were fictitious, but that the daycares represent realistic and typical features of daycares in Denmark.[11] Hypothetical questions that are meant to elicit preferences are common in large surveys as, e.g., the Health and Retirement Study (HRS) or European Values Survey (Michaud, van Soest, & Bissonnette, 2018) (Berggren & Nilsson, 2013). Table 1 presents the testimonials provided in the questionnaire.

Table 1: Testimonials about the two daycares in the survey

Daycare A "Structured" daycare	Daycare B "Free-play" daycare
"The daycare has a structured plan, with activities organized for all days." (Parent I)	"There are lots of opportunities for creative play and a focus on joint play and cooperation." (Parent IV)
"I like that stories are often read aloud, and the children are encouraged to talk about their play and games with the teachers." (Parent II)	"I like that the children were outside most of the time. The daycare might seem a bit messy and chaotic at times, and my child often came home with dirty clothes, but I saw that as a sign of having been outside a lot." (Parent V)
"The daycare is always clean and organized. They issue a weekly newsletter, which makes it easy for me to coordinate our own activities and plan the week." (Parent III)	"The personnel are fantastic. One can always go to them, and they take the time to talk about my child's development." (Parent VI)

After presenting these testimonials, we then asked parents the following question:

"Given the descriptions of daycare A and B, which of the two daycares do you prefer, A or B?"

All respondents were given the exact same descriptions of the daycares, but as part of our experimental approach, we provided different information on the individuals who had allegedly provided the testimonials ("Parent I" to "Parent VI" in Table 1).[12] Specifically, we randomly distributed different names and, in some cases, professions of the testifiers across the sample of respondents. In total, there were seven name-profession combinations, leading to seven "treatments" that were each randomly distributed to 1/7 of the population in the survey. Some respondents were only exposed to testimonials by individuals with typical Danish names,

while others were exposed to testimonials by individuals with names that are typically associated with people of ethnic origin. Our seven treatments varied the names and professions of the testifiers as follows:

Treatment	**Description**
NoNames	No names, no professions
AllDanes_NoProf	All Danish names, no professions
MinoFree_NoProf	Danish names for five testifiers, ethnic-minority name for one testifier of daycare B (free-play), no professions
MinoStruc_NoProf	Danish names for five testifiers, ethnic-minority name for one testifier of daycare A (structured), no professions
AllDanes_Prof	All Danish names, information on profession
MinoFree_Prof	Danish names for five testifiers, ethnic-minority name for one testifier of daycare B (free-play), information on profession
MinoStruc_Prof	Danish names for five testifiers, ethnic-minority name for one testifier of daycare A (structured), information on profession

Our main interest is to investigate how parental preference for structural vs. free-play daycares varies with name and profession of the people behind the testimonials presented in treatments 1-6. In treatments 1 and 4 (*AllDanes_NoProf* and *AllDanes_Prof*) testifiers had exclusively typical Danish names, while in treatments 2, 3, 5, and 6 (*MinoFree_NoProf, MinoStruc_NoProf, MinoFree_Prof* and *MinoStruc_Prof*) one of the testifiers had an ethnic minority sounding name. As a control, treatment 0 (*NoNames*) contained no information about the testifiers.

In treatments 1-3, we provided the names but not the professions of the testifiers, while in treatments 4-6 we provided both their names and professions, which are highly correlated

with their educational level. In particular, testifiers with ethnic minority names were either said to be journalists or teachers, which typically require a master's degree. By comparing responses to treatments 1-3 (*AllDanes_NoProf, MinoFree_NoProf,* and *MinoStruc_NoProf*) to treatments 4-6 (*AllDanes_Prof, MinoFree_Prof*, and *MinoStruc_Prof*), we are able to test whether the minority testifier being highly educated makes any difference.

Table 2 provides an overview of the information given about the testifiers of the two daycares.

Table 2: Overview of information given to respondents about testimonials on daycare A ("structured") and B ("free-play")

	Daycare A: "Structured"			**Daycare: "Free-play"**		
	Parent I	**Parent II**	**Parent III**	**Parent IV**	**Parent V**	**Parent VI**
0 ***NoNames***	No name	No name	No name	No name	No name	No name
1 ***AllDanes_NoProf***	Søren P father of Esther	Birthe mother of Emil	Lene K mother of Camilla	Torben M father of Mai	Mette mother of Emma	Helle G mother of Per
2 ***MinoFree_NoProf***	Søren P father of Esther	Birthe mother of Emil	Lene K mother of Camilla	Torben M father of Mai	**Hoada** **mother of Walid**	Helle G mother of Per
3 ***MinoStruc_NoProf***	Søren P father of Esther	**Hoada** **mother of Walid**	Lene K mother of Camilla	Torben M father of Mai	Mette mother of Emma	Helle G mother of Per
4 ***AllDanes_Prof***	Søren P father of Esther architect	Birthe mother of Emil Journalist	Lene K mother of Camilla student	Torben M father of Mai professor	Mette mother of Emma high school teacher	Helle G mother of Per public employee
5 ***MinoFree_Prof***	Søren P father of Esther architect	Birthe mother of Emil Journalist	Lene K mother of Camilla student	Torben M father of Mai professor	**Hoada** **mother of Walid** **high school teacher**	Helle G mother of Per public employee
6 ***MinoStruct_Prof***	Søren P father of Esther Architect	**Hoada** **mother of Walid** **Journalist**	Lene K mother of Camilla Student	Torben M father of Mai professor	Mette mother of Emma high school teacher	Helle G mother of Per public employee

III. Empirical Analysis

A. Descriptive statistics

In our empirical analysis, we investigate whether parental preferences for structured versus free-play daycares vary in a systematic way with the information in the testimonials that were randomized across respondents in the survey. In particular, we investigate whether stated preferences vary depending on whether the testimonials contain ethnic minority names. Table 3 shows the "raw" shares of parental preferences for structured and free-play daycares respectively. On average, 77% preferred the free-play (B) option, while 23% preferred the structured daycare (A). When comparing responses across the seven groups (treatments), we find that the likelihood of preferring the structured daycare is lowest for parents who were subjected to the testimonials in treatment 3 (*MinoStruc_NoProf*) and 6 (*MinoStruc_Prof)*. Simple pairwise double-sided t-tests indicate that the shares of those preferring the structured (versus free-play) daycare are significantly different across the treatments. In particular, the probability of preferring the structured daycare for treatment 3 (*MinoStruc_NoProf*) is statistically significantly different from treatment 1 – *AllDanes_NoProf* – and treatment 2 – *MinoFree_NoProf*. The p-values from t-tests are 0.09 and 0.08, respectively. Likewise, the probability of preferring a structured daycare in treatment 6 – *MinoStruc*_Prof - is (marginally) significantly different from treatment 4 – *AllDanes_Prof* - (p=0.12) and treatment 5 – *MinoFree_Prof* - (p=0.09). However, adding professional information does not change the preferences significantly for daycares.

Table 3: Percentage of parents choosing type A (structured) or type B (free-play) by treatment

Treatment	A Structured	B Free-play	N
NoNames	26.7%	73.3%	311
AllDanesNoProf	24.5%	75.5%	319
MinoFree_NoProf	24.9%	75.1%	293
MinoStruc_NoProf	19.0%	81.0%	321
AllDanes_Prof	23.3%	76.7%	317
MinoFree_Prof	23.8%	76.2%	311
MinoStruc_Prof	18.2%	81.8%	307
Total	22.9%	77.1%	2,179

B. Empirical model

To further investigate these findings, while controlling for possible non-random variation in socioeconomic characteristics across our randomized treatments (0-6), we next perform a regression analysis in two steps. We first estimate a model where all seven treatments are included individually. In order to measure directly the impact of including an ethnic minority name among testifiers on parental preferences for daycare, we model the probability of preferring structured daycare as a function of the seven treatments, controlling for household and district characteristics. In our most general empirical model, the probability of preferring the *structured* daycare is given by:

$$p_i = \Pr[y_i = 1|X_i] = f(\alpha + \beta_1 AllDanes\_NoProf_i + \beta_2 MinoFree\_NoProf_i + \beta_3 MinoStruc\_NoProf_i + \beta_4 AllDanes\_Prof_i + \beta_5 MinoFree\_Prof_i + \beta_6 MinoStruc\_Prof_i + \gamma X_i) \quad (1)$$

where $y_i = 1$ if the respondent (the parent) prefers structured daycare (and $y_i = 0$ if the respondent prefers the free-play daycare). $AllDanes\_NoProf_i$ *to* $MinoStruc\_Prof_i$ are dummy variables that take on the value 1 if the survey respondent was given this particular testimonial and 0 otherwise. X_i contains individual controls (characteristics of the respondent household, i.e., the mother, the father and the child, and residential district characteristics of the responding household).[13]

As can be seen from appendix Table A2, the population is well balanced across the seven treatment categories with respect to observable characteristics. The category $NoNames$ (treatment 0), i.e., the group that received no information on neither names nor profession behind the testimonials, is here considered the baseline.

In the second step of our empirical analysis, we continue examining the impact of having a testifier with an ethnic minority name for the choice of structured daycare, but we now ignore whether information was given on the profession. Implicitly, we thus assume that the effects are equal across 1 and 4 (*AllDanes_NoProf* and *AllDanes_Prof*), across 2 and 5 (*MinoFree_NoProf* and *MinoFree_Prof*), and across 3 and 6 (*MinoStruc_NoProf* and *MinoStruc_Prof*). We thus combine the six treatments (1-6) in Table 2 into three main treatments, while the no-name treatment is the same:

	Treatment	Description	Based on
0	NoNames	No names	Treatment 0
1	AllDanes	All Danish names	Treatment 1 + treatment 4
2	MinoFree	Ethnic minority name in free-play	Treatment 2 + treatment 5
3	MinoStruc	Ethnic minority name in structured	Treatment 3 + treatment 6

Our (constrained) empirical model in step 2 has the following form:

$$p_i = \Pr[y_i = 1|X_i] = f(\alpha + \beta_2 MinoFree_i + \beta_3 MinoStruc_i + \beta_0 NoNames_i + \gamma X_i) \quad (2)$$

where $AllDanes$ (i.e. all Danish names in both structured and free-play) is now the base treatment. Our main parameters of interest, β_2 and β_3, therefore directly show the effect of replacing a Danish name with an ethnic sounding name in one of the testimonials for the free-play and the structured institution, respectively.

C. Results

Equations (1) and (2) are estimated using a linear probability model (OLS).[14] Table 4 shows the estimation results for equation (1). Column 1 in Table 4 shows the results when including the six treatment dummies (*AllDanes_NoProf, AllDanes_Prof*, *MinoFree_NoProf*, *MinoFree_Prof*, *MinoStruc_NoProf*, and *MinoStruc_Prof*; note that treatment 0 (*NoNames*) is the base group), but no controls. Column 2 includes controls for household and residential district characteristics. Column 3 further includes district dummies. Compared to the baseline treatment (*NoNames*), we see that including names or names+profession reduces the likelihood of choosing the structured daycare in general. The differences are, however, only statistically significant for treatments *MinoStruc_NoProf* and *MinoStruc_Prof*, corresponding to the situation in which one of the testifiers of the structured daycare had an ethnic minority name.

To analyze the treatment effects across the treatments further, we perform a number of F-tests which are reported in the second half of Table 4 after the main regression results (p-values for each F-test are shown in the table).

In Part I, we ask whether the demand for structured daycare is different if the testimonial regarding the free-play daycare contains an ethnic minority name rather than all Danish sounding names, thus comparing treatments *MinoFree_NoProf* to *AllDanes_NoProf* and *MinoFree_Prof* to *AllDanes_Prof*. When comparing the parameter estimates of corresponding treatments, we find no statistically significant differences in choosing the structured daycare between *MinoFree_NoProf* and *AllDanes_NoProf* treatments, and the same applies when comparing *MinoFree_Prof* to *AllDanes_Prof*. We thus do not find any discrimination against free-play daycares with testimonials containing ethnic minority names.

In part II of Table 4, we analyze whether the demand for structured daycare is different if one of the testifiers' names for the structured daycare contains a non-Danish name. We thus compare treatment *MinoStruc_NoProf* to *AllDanes_NoProf*, finding a statistically significant difference (p=0.08) in the probability of choosing the structured daycare. This result indicates a negative effect on the choice of structured daycare when respondents observe an ethnic minority name in the testimonials for this same daycare. The probability of choosing the structured daycare is also lower for *MinoStruc_Prof* than for *AllDanes_Prof*, but the difference is not statistically significant (p=0.25). However, when we combine *MinoStruc_NoProf* and *MinoStruc_Prof* and test against the combined

AllDanes_NoProf and *AllDanes_Prof*, we find that the probability of choosing the structured daycare is lower when an ethnic minority name is mentioned in the testimonial (p=0.04).

Finally, we analyze in Part III of Table 4 whether information on testifiers' profession changes the discriminatory choices, as suggested by the tests in Part I and II. We thus compare treatments *AllDanes_NoProf* to *AllDanes_Prof*, *MinoFree_NoProf* to *MinoFree_Prof*, and *MinoStruc_NoProf* to *MinoStruc_Prof*, respectively. We do not find significant differences between the treatments that differ in the information on the testifiers' profession. We assigned a female name and a profession that requires master's degree education to the minority testifier. These traits should imply that she is well integrated to the Danish society and her child is not likely to have behavioral or language issues, common among the minority group documented in the literature[15]. Because the information on the minority testifier's profession does not alter our results, we cannot rule out the taste-based discrimination (i.e., dislike because of the testifier's race) among the parents who choose the structured daycare. At the same time, we cannot rule out the statistical discrimination (i.e., discrimination due to some undesirable traits, such as poor language skills or lower education) because a testimonial by a minority parent may imply that the daycare in question is likely to have a high proportion of minority children. Hence, the survey respondents may downplay the testifier's professional credentials because the other minority parents may share the minority group's undesirable traits. Thus, one's avoidance of the daycare for which the minority person provided a testimonial can be attributed to statistical discrimination.

Table 4: Regression results, main estimation, equation (1)

	(1)	(2)	(3)
1 AllDanes_NoProf	-0.0224	-0.0112	-0.0122
	(0.0335)	(0.0322)	(0.0323)
2 MinoFree_NoProf	-0.0177	-0.0243	-0.0224
	(0.0342)	(0.0329)	(0.0330)
3 MinoStruc_NoProf	-0.0768**	-0.0683**	-0.0677**
	(0.0334)	(0.0322)	(0.0322)
4 AllDanes_Prof	-0.0334	-0.0360	-0.0394
	(0.0335)	(0.0323)	(0.0323)
5 MinoFree_Prof	-0.0289	-0.0317	-0.0337
	(0.0337)	(0.0325)	(0.0325)
6 MinoStruc_Prof	-0.0845**	-0.0791**	-0.0764**
	(0.0338)	(0.0326)	(0.0325)
Constant	0.267***	0.319***	0.293***
	(0.0238)	(0.0403)	(0.0489)
Observations	2,179	2,179	2,179
R-squared	0.005	0.088	0.097
Controls	NO	YES	YES
District FE	NO	NO	YES
F-tests across treatments (p-values)			
Part I: Ethnic minority in free-play			
1 vs 2: *AllDanes_NoProf* vs. *MinoFree_NoProf*	0.892	0.687	0.756
4 vs 5: *AllDanes_Prof* vs. *MinoFree_Prof*	0.893	0.894	0.859
1+4 vs 2+5: *AllDanes* vs. *MinoFree*	0.848	0.847	0.922
Part II: Ethnic minority in structured			
1 vs 3: *AllDanes_NoProf* vs. *MinoStruc_NoProf*	0.101*	0.074*	0.083*
4 vs 6: *AllDanes_Prof* vs. *MinoStruc_Prof*	0.129	0.184	0.253
1+4 vs 3+6: *AllDanes* vs. *MinoStruc*	0.026**	0.028**	0.042**
Part III: Information about profession			
1 vs 4: *AllDanes_NoProf* vs. *AllDanes_Prof*	0.739	0.438	0.397
2 vs 5: *MinoFree_NoProf* vs. *MinoFree_Prof*	0.743	0.823	0.734
3 vs 6: *MinoStruc_NoProf* vs. *MinoStruc_Prof*	0.820	0.738	0.788

Note: Base group is *NoNames*. Controls included in columns 2-3 are dummies for single parent, child is boy, mother's highest education is primary school, mother has college education, low income family, mother works, child in poor health, child low birthweight, child has handicap, child is non-western, father responded to survey, and a number of residential district dummies for high non-western population share, low church member share, being on official ghetto list, district high share of populist right-wing party voters. Estimates shown in column 3 include residential district dummies. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Given that we reject (in part III, Table 4) the hypothesis that providing information on testifiers' professions makes a difference to respondents' choices, we proceed by simplifying our empirical model as in Equation (2) where treatments are combined to three (four) main treatments. In Table 5, we show the results of our estimation of Equation (2). The group with all Danish names – Treatment 1, *AllDanes* - is now the base.

Table 5: Regression results, main estimation, equation (2)

	(1)	(2)	(3)
2: MinoFree	0.00438	-0.00455	-0.00239
	(0.0238)	(0.0230)	(0.0230)
3: MinoStruc	-0.0527**	-0.0500**	-0.0462**
	(0.0236)	(0.0227)	(0.0228)
0: NoNames	0.0279	0.0236	0.0258
	(0.0290)	(0.0280)	(0.0280)
Constant	0.239***	0.296***	0.267***
	(0.0166)	(0.0365)	(0.0458)
Observations	2,179	2,179	2,179
R-squared	0.005	0.088	0.096
Controls	NO	YES	YES
District FE	NO	NO	YES

Note: Base group is *AllDanes*. Controls included in columns 2-3 are dummies for single parent, child is boy, mother's highest education is primary school, mother has college education, low income family, mother works, child in poor health, child low birthweight, child has handicap, child is non-western, father responded to survey, and a number of district dummies for high non-western population share, low church member share, district being on official ghetto list, district high share of populist right-wing party voters. Estimations shown in column 3 include local district dummies. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Results for the estimation of Equation (2) confirm the findings obtained by estimating Equation (1). The effect of *MinoStruc* — i.e., of replacing one testifier's name in the structured daycare with a non-Danish name — reduces the demand for that daycare by almost 5 percentage points. This reduction corresponds to a drop of more than 20% when compared to an overall demand for structured daycare of 23%. The result is robust to adding individual and district level controls. As before, the effect of *MinoFree* – i.e., the presence of an ethnic minority child in the testimonial for the free-play daycare - does not have any significant impact (neither statistically nor numerically) on the demand for one type of daycare over the other. In other words, when the ethnic minority is associated with free-play daycare, there is no discrimination.

D. Heterogeneity and Robustness

First, one might thus worry that the results shown in Tables 4-5 on the variation in the demand for structured daycare across treatments would mainly be driven by minority parents. However, estimations on the sample of parents excluding minority families confirm the results shown above (this result is reported in Figure A1 in the appendix).

Second, parental preferences for type of daycare differ according to background characteristics of the respondents measured at the individual and district level (see Table A3). Households are, on the one hand, *more* likely to prefer structured daycare if the mother has a low level of education, the child is of non-western background, the child is of poor health (self-reported), and the father responded to the survey (rather than the mother). On the other hand, households are *less* likely to prefer structured daycare if the child is a boy, the family is low-income, or the mother works. These results are confirmed by Table A4 showing how the probability of choosing structured daycare varies with household and district characteristics.

As the probability of choosing structured (over free-play) daycare is positively related to certain child, family, and district characteristics, we furthermore investigated whether subgroups of our sample react differently to being exposed to ethnic minority names in the two types of daycares. In particular, we investigated whether the estimates vary with the following twelve background characteristics (measured by dummies): whether mother had a college degree, whether mother had no education beyond primary school, whether mother was working, whether the child is a boy, whether the child had low birthweight, whether the child was of non-Western background, whether the family is a low-income family, whether the father responded to the survey[16], and four district level dummies for whether the district had a high share of non-Westerners, whether the district had a low share of church members, whether the district was on the official "ghetto list", and whether the district had a high share of voters for populist parties at the most recent public election.

Generally, none of the interaction terms between our three treatment variables, *MinoFree*, *MinoStruc*, and *NoNames*, and the dummies for child, parent, or district background were significant.[17] However, we do find that some of the combinations of the treatment variable and the interaction between treatment and socioeconomic background dummy are jointly significant and numerically stronger than the main effect. In particular, we find that the negative effect of *MinoStruc*

is *weaker* if the mother works, if the father is the respondent, or if the district has a high share of non-Westerners, and *stronger* if the family has low income or the child is of non-Western background.

Finally, we confirm our results through a distance analysis. We asked parents how much further they are willing to travel in order to go to the type of daycare they prefer and compare the parents' willingness to travel across our treatments in a distance analysis. We find that parents who prefer structured daycare show a higher willingness to travel to the structured daycare instead of attending a free-play daycare at a closer distance when there is an ethnic minority name in the testimonial for the free-play daycare (See Appendix B for full analysis). In other words, parents who prefer the structured daycare are willing to travel further to avoid ethnic minorities. This result is consistent with findings in school and neighborhood choice literature that show that people move residences and schools in order to avoid racial minorities (See, for example, Krysan, Couper, Farley, & Forman 2009; Van Ham & Clark 2009; Lewis, Emerson & Klineberg 2011; Ibraimovic & Masiero 2014; Andersen 2017; Saporito & Lareau 1999; Billingham & Hunt 2016; and Goyette, Farrie, & Freely 2012).

E. Survey responses' reliability and compliance with real-world choices

One may worry that as our main question of interest on parental preferences for structured versus free-play daycare is of a somewhat hypothetical character. Survey responses would not necessarily reflect true preferences or actions. As concern is sometimes raised about how reliable survey responses are in general when it comes to eliciting preferences and responding to hypothetical questions where stated answers have no real consequences, we investigated how well individual responses are aligned with respondents' real-world choices and with socio-economic characteristics found in the register data.

First, we checked how reliable the survey responses generally are compared to real-world daycare choices by comparing the two daycares that respondents in the survey claim that they have signed up for to the two daycares that they actually signed up for according to the administrative register data from the Copenhagen municipality. We find that in as much as 97% of the cases, our respondents report in the survey to have chosen the *exact same* daycare institution as the one that they actually ended up signing up for according to administrative data. This suggests that the survey responses on preferred daycares are almost perfectly in line with actual choices.

Secondly, those who prefer the structured daycare differ systematically from those who chose free-play on a number of socio-economic characteristics, as shown in Tables A3 and A4. Thus those who prefer structured daycare are generally more likely to be of non-Western background, the mother has less education and is less likely to be employed.

Thirdly, the survey asks which characteristics of a daycare institution that parents find most important when choosing a daycare to sign their child up for, allowing us to investigate how the weight that parents put on different characteristics of daycares correlate with whether they prefer structured or free-play daycare. Detailed results can be found in the appendix Table A7 and Figure A2. We find that parents who prefer the free-play daycare are significantly more likely to put weight on their impression from visiting the daycare before signing up (54% vs. 43%), on their view of the outdoor facilities and environment (37% vs. 29%), and on the number of children in the daycare (22% vs. 14%). Those who preferred the structured type of daycare, on the other hand, are placing significantly more weight on pedagogical profile (24% vs. 20%) and on opening hours (18% vs. 11%). As outdoor activities and time for the individual child are qualities that were highlighted in the testimonials for the free-play daycare, parents' responses seem to be consistent across different parts of the survey. Moreover, from the priorities mentioned, it seems that it is less likely that parents who prefer the structured daycare have paid a visit to the daycare before making their prioritization of daycares, suggesting perhaps that parents who choose the structured daycare spend less time searching for a daycare.

IV. A Candidate Mechanism Explaining Experimental Results

Understanding why parents who choose structural daycare are more likely to switch their choice when one of the testifiers has a minority sounding name could have important implications in terms of policy making. In this section, we propose a possible mechanism based on (1) the recent literature on the economics of parenting style (Doepke and Zilibotti, 2017 (henceforth DZ)) and (2) the positive association between the degree of paternalism and discriminatory attitudes. Given that the choice in our experiment is between structured or free-play daycares, we work with two admittedly broad categories of parenting styles[18]: (i) a strict parenting style which corresponds to the choice of structured daycare and (ii) a relaxed parenting style which corresponds to the choice of free-play daycare. In DZ, parent's degree of paternalism plays a crucial role in whether one adopts relaxed or

strict parenting style. Moreover, parents with higher degree of paternalism more often end up choosing a strict parenting style. We will show that our experimental results are consistent with the case in which these parents are also more likely to have discriminatory views about the minority population.

A. Model

As mentioned, we work with two categories of parenting styles: (i) a strict parenting style, which encompasses both Authoritarian and Authoritative styles defined in DZ, and a (ii) relaxed parenting style, containing both Neglecting and Permissive parenting styles. All parents have *altruistic* and *paternalistic* motives, and they can affect their children through direct interference by shaping preferences (e.g., by choosing structural daycares) and restricting their choices (e.g., by selecting the child's peers).

The equilibrium parenting style depends on preferences and on the economic environment.[19] We consider an infinite horizon dynastic model in which each parent has a single child. Each parent derives utility from one's own child through two different channels: (i) there is an altruistic component, through the child's actual lifetime utility υ and a (ii) paternalistic component, which is a different function ῡ based on the parent's own preferences. The parent's value function is

$$V(S) = (1-\gamma)\upsilon + \gamma\tilde{\upsilon}. \tag{3}$$

The parameter $\gamma \in [0,1]$ captures the degree of paternalism which we will revisit after defining υ and ῡ below:

$$\upsilon = a(\mathrm{L} - \mathrm{P}) + \beta(S' + V'(S')) \tag{4}$$

$$\tilde{\upsilon} = L - P + \beta(S' + V'(S')) \tag{5}$$

in which $P \in \{0,1\}$ is the parenting style and $\beta \in (0,1)$ represents the discount factor. Here, $P = 1$ represents a strict parenting style, while $P = 0$ represents the relaxed parenting style. In addition, we assume that $a > 1$, which captures the child's present bias, L is leisure (exogenous), S is current skill level of the child, and S' is the skill level of the child in the subsequent period. The utilities (4) and (5) follow *D*Z closely, but with the departure that we take a more reduced form approach and assume that the skill level (S') affects the child's well-being directly (instead of changing her degree of

present bias, for example). This facilitates exposure without compromising the main results and the underlying mechanisms at hand. Here, observe that the higher the degree of paternalism is, the less importance the parent gives to the current level of child's leisure.[20]

The skill level in the child's second period, S', depends on the current skills, on the peers' skills, and on the parenting style:

$$S' = f(S, \bar{S}_i, P)$$

Here, S represents the child's own skills, and $\bar{S}_i$ represents the peers' average skills at a chosen daycare i. We assume that this technology is strictly increasing in all its arguments and concave in S and $\bar{S}$.[21] We write $S_1' = f(S, \bar{S}_i, P = 1)$ and similarly for $P = 0$. Then we substitute (4) and (5) into (3) and obtain

$$V(S) = (L - \gamma)\Big(a(L - P) + \beta\big(S' + V'(S')\big)\Big) + \gamma\Big((L - P) + \beta\big(S' + V'(S')\big)\Big) \qquad (6)$$

which simplifies to:

$$V(S) = (L - P)(1 + (1 - \gamma)(a - 1)) + \beta\big(S' + V'(S')\big)$$

In our survey, daycares are described as being either more accommodative of free play or having a more structured approach. Hence, the choice of strict parenting style corresponds to the choice of the structured daycare, while the relaxed parenting style means the choice of the free-play daycare.[22] In our control group, no information is given about the ethnic composition of these daycares. In our experimental sessions, a minority name is associated to one of the daycares. Before we discuss how the presence of a child with a minority name might impact the perception of the average skill level of the children in a daycare, we will make the following neutrality assumption.

Assumption 1 (Ex-ante Neutrality): When no extra information is given:

$$\bar{S}_{FreePlay} = \bar{S}_{Structured}$$

This assumption states that, all else equal, parents assume that the quality – the skill level - of the average child is the same across all daycares.

The parent's value function if she chooses the strict parenting style, $P = 1$, is:

$$V(S) = -(1 - \gamma)a - \gamma + \beta\big(S_1' + V'(S_1')\big) + (1 - \gamma)aL + \gamma L$$

whereas if she chooses the relaxed parenting style, $P = 0$:

$$V(S) = S_0' + V'(S_0') + (1-\gamma)aL + \gamma L$$

Clearly, V is strictly increasing in S (and V' in S'). We assume that parameters are such that in our control group for a low value of γ, the optimal parenting is $P^* = 0$, and for a high value of γ the optimal parenting is $P^* = 1$.[23]

We will use the model to discipline our interpretation of the experimental results, namely, the impact on parental choices of the introduction of an ethnic minority student in either a structured or a free-play daycare.

We assume that if a peer student perceived as having a low skill level (or, equivalently, perceived as a student that will demand extra efforts by the teachers) enters a particular daycare, then $\bar{S}$ decreases for that daycare. (Similarly, it could be that the presence of such student signals that more likely other students with low skill level are also present at such daycare). That is, without extra information (in our baseline model) $\bar{S}_{FreePlay} = \bar{S}_{Structured}$, but if a student perceived as demanding more resources enters a daycare j but not daycare i, then $\bar{S}_j < \bar{S}_i$.

In our control group, when there are no minority names associated to either daycare, parents only differ by their paternalistic degree, i.e., by parameter γ. When a minority name is linked to a given daycare, it may change a parents' perception of the quality of the average child at that specific daycare. We will say that a parent has a discriminatory perception if the inclusion of a child with a name associated with a minority group in a particular daycare decreases the parent's perceived quality of average child at that daycare. A parent might have a discriminatory perception or a neutral perception, denoted by $\rho = 1$ or $\rho = 0$, respectively.

B. Analysis

We are interested in the comparative statics, that is, in how the parenting style choices will be affected once we incorporate our experimental exercise. For simplicity, it is convenient to assume that there are only two possible values of γ: a low γ_l for which, all else equal, it is optimal to choose relaxed parenting $P = 0$ and a high γ_h, for which the optimal parenting style, all else equal, is the strict one, $P = 1$.

Therefore, we write the type space as $\Omega = \{\gamma_l, \gamma_h\} \times \{0,1\}$. A type $(\gamma_l, 0)$ is a parent with a low level of paternalism as well as a neutral view on students with minority names. Her choice is $P = 0$. A type $(\gamma_l, 1)$ has a low level of paternalism but discriminatory perception, so she will choose a free-play daycare only whenever there is no student with a minority name in the free-play daycare. Otherwise, she will change to a structured daycare (in our experiment, a student with a minority name is either in a free-play daycare or in a structured one, but not in both). A type $(\gamma_h, 0)$ is a non-discriminating paternalistic parent who chooses structured daycare ($P = 1$), and a type $(\gamma_h, 1)$ is a paternalistic parent who chooses structured daycare only whenever there is no student with a minority name in that daycare, otherwise, she chooses a free-play daycare.

Let $Pr(\omega \in \Omega)$ be the proportion of individuals of type ω in the population.[24] One can start with the following four possible hypotheses:

(I) No Discrimination (there is no widespread discrimination in the society). In this case,

$$\Pr(\gamma_l, 1) = \Pr(\gamma_h, 1) = 0 \tag{7}$$

(II) Discrimination is uniform in society (there is widespread discrimination in the society, but discrimination is not correlated with intrinsic parental preferences, namely, it is uncorrelated with γ).

$$\frac{\Pr(\gamma_l,1)}{\Pr(\gamma_l,1)+\Pr(\gamma_l,0)} = \frac{\Pr(\gamma_h,1)}{\Pr(\gamma_h,1)+\Pr(\gamma_h,0)} \tag{8}$$

(III) Discrimination is more likely among parents with a strong taste for structured daycares (parents that are more paternalistic are more likely to discriminate against minorities).

$$\frac{\Pr(\gamma_l,1)}{\Pr(\gamma_l,1)+\Pr(\gamma_l,0)} < \frac{\Pr(\gamma_h,1)}{\Pr(\gamma_h,1)+\Pr(\gamma_h,0)} \tag{9}$$

(IV) Discrimination is more likely among parents with a strong taste for free-play daycares.

$$\frac{\Pr(\gamma_l,1)}{\Pr(\gamma_l,1)+\Pr(\gamma_l,0)} > \frac{\Pr(\gamma_h,1)}{\Pr(\gamma_h,1)+\Pr(\gamma_h,0)} \tag{10}$$

Consider now our first experiment of introducing a minority student in a free-play daycare. The predictions are: if (I) is true, then we should not observe a significant difference to the baseline case. If (II) is true, then we should observe some parents that are choosing $P = 0$ switching to $P = 1$. If

(III) is true, we should not expect parents to switch from $P = 0$ to $P = 1$. If (IV) is true, we expect a switch from $P = 0$ to $P = 1$. In our data, we observe only small differences in take-up of the free-play daycare when comparing those with testimonials of all-Danish names vis-a-vis those testimonials that include ethnic minority names. This rejects (II) and (IV).

Consider now our second experiment: introducing a minority student in a structured daycare. The predictions are: if (I) is true, then we should not observe a significant difference to the baseline case. If (II) is true, then we should observe some parents that are choosing $P = 1$ to switch to $P = 0$. If (III) is true, then we should not expect parents to switch from $P = 1$ to $P = 0$. If (IV) is true, we should not observe different choices than in the baseline. In our data, we observe switches from $P = 1$ to $P = 0$, which corroborates (III) and rejects (I). The two experiments together present a case for hypothesis (III). Table 6 summarizes the predictions and Table 7 the results.

Table 6: Predicted percentage of parents choosing structured daycare

Hypothesis	Control Group: All Danish names	Minority in Free Play	Minority in Structured
No Discrimination	23.9%	———	———
Uniform Discrimination	23.9%	↑	↓
Paternalistic Discrimination	23.9%	———	↓
Altruistic Discrimination	23.9%	↑	———

Note: The arrows in the table represent the direction of the effects predicted by our theory. Each row represents a different hypothesis, and each cell represents the percentage of parents choosing structured day care. A straight horizontal line represents a prediction that there will not be significant changes in the percentage, and the vertical arrow represents the direction of predicted change, given the hypothesis and the treatment.

When comparing the model predictions from Table 6 with the empirical results, we observe that there is a significant reduction in the percentage of parents choosing structured daycares once a student with a minority name is allocated in the structured daycare – 18.6% (average of 19.0% and 18.2%) prefer structured daycare in the situation with minority children in the structured daycare,

which is significant lower than the 23.9% (average of 24.5% and 23.3%) preferring structured daycare when only Danish names are seen in the daycare. Thus, our result is consistent with hypothesis (III) in which a discriminatory attitude towards the minority name is more likely in parents with a paternalistic preference, who would otherwise choose a structured daycare. By comparison, 24.3% (average of 24.9% and 23.8%) is not significantly different than the 23.9% (average of 24.5% and 23.3%) preferring structured daycare when only Danish names are seen in the daycare. This finding is consistent with ruling out hypothesis (IV).

Our analysis of the experimental results (Section III) backs hypothesis III. In the model proposed above, parents with more paternalistic motives more often choose the structured daycare. Then our experimental results that parents who select the structured daycare are more likely to have discriminatory attitudes mean that parents with more paternalistic tendency are also the ones who discriminate more often. We validate this in the next subsection.

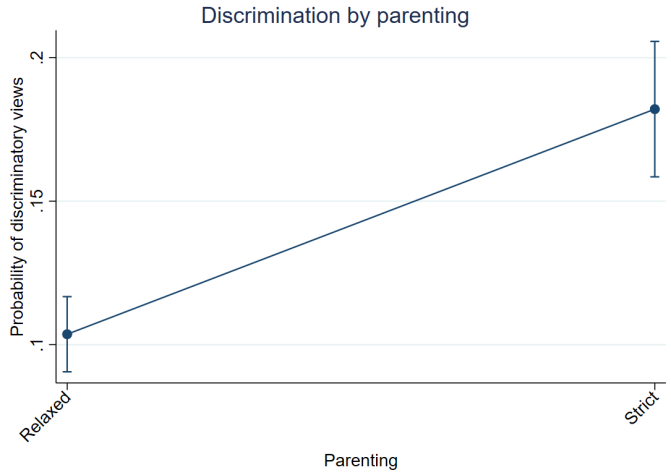
C. Empirical evidence on the differing discriminatory views by parenting styles based on European Values Survey

We now justify the key assumption used in the model: the discriminatory attitudes depend on the paternalistic degree of parents in Denmark. We use the data from the European Values Survey (EVS) of 2017. Focusing on the 3,362 responses from the Danish part of EVS, we investigate the correlation between preferences for peer ethnicity and views on pedagogical and parenting style. In particular, we mainly used two questions asked in the survey. Appendix C describes the analysis and data from EVS used for this analysis. The first question we investigated asked about respondents' views on which child qualities they found most important that families should develop at home. Response categories span qualities that could both be seen as representing authoritative, authoritarian, and more permissive parenting views. The second question we investigated asked respondents which groups of people they would not like to have as a neighbor. Among response categories were mentioned religious and ethnic minority groups such as Christians, Muslims, Jews, Romans, immigrants, and persons of other race in general.

Based on the detailed responses to the questions concerning child qualities and preferences for neighbors, we used factor analysis to identify two indicators that capture high versus low discriminatory views, on one hand, and degree of strict parenting (paternalism), on the other hand.

Through a logit estimation, we then investigated the association between discriminatory attitudes towards neighbors and views on parenting as captured by these two indicator variables, controlling for gender and age of respondent. The predicted margins resulting from this estimation are shown in Figure 2. We observe that discriminatory views are significantly more likely among individuals that favor child qualities nurtured by a more strict (paternalistic) parenting style. While around 10% of people with relatively relaxed views on parenting principles were likely to dislike neighbors of minority background, this percentage was around 18% for people with more paternalistic views. Thus, this analysis provides a justification for the assumption that individuals with preferences for strict or paternalistic parenting are more likely to hold discriminatory views in their choices of daycares.

Figure 2: Correlation between parenting style and discriminatory views



Note: The graph is based on a logit estimation of having discriminatory views as a function of a preference for paternalistic parenting. We control for gender and age. Standard errors are bootstrapped with 100 replications.

V. Discussion and Conclusion

A parent's choice of a daycare is shaped not only by the institution's location, resources, and pedagogical profile, but also by the anticipated participation of other parents and their children. We developed and conducted a simple randomized survey online to study the interaction of such factors

on parental daycare choices. The randomized survey employed what seemed like personal vignettes from six parents to vary the characteristics of the two hypothetical daycares under consideration. While the majority of parents (75%) in Copenhagen prefer a 'free-play' over a 'structured' daycare, we found that the parental preference for the structured daycare is lower (roughly 20%) when a testimonial for structured daycare includes an ethnic minority name. However, the parental preference for the free-play daycare is unchanged when one of the testimonials for the free-play daycare is assigned an ethnic minority name. In addition, those who prefer the structured daycare are willing to travel more than 17% to avoid the daycare with minority children. A rough calculation in Appendix B shows that these parents are willing to spend about 2USD daily to avoid the daycare with a minority child (or children).

Our survey design included additional controls as a means to isolate the possible mechanisms behind our results (Abdulkadiroğlu, A., Agarwal, N., & Pathak, P. A., 2017). We considered an additional treatment by which we assigned all fictitious parents (who had allegedly given the testimonials) a typical high skill occupation such as high school teacher or journalist. This treatment was meant to isolate factors that occur when respondents make implicit judgements about the minority parents' backgrounds. We found that the addition to testimonials of information about occupation did not change our results. Although this is only suggestive evidence, we cannot rule out that the discrimination is taste-based rather than statistical.[25]

Overall, our results indicate that parental sorting into daycares may be influenced by relatively small changes in their peer composition even in a highly liberal and diverse city such as Copenhagen, supported by our finding that parental preference for structured daycare is lower if this daycare has an ethnic minority. However, we also found that there is a relatively large group of parents who prefer the free-play daycare and whose preferences are unaffected by the presence of a minority parent and child. Building on recent work by Doepke and Zilibotti (2017) on parenting styles, we present a simple theoretical model that can rationalize why we find stronger reactions to our experiment among parents with preferences for structured daycare.

If the sorting mechanism is true, we can expect that a fraction of parents who are signing their children up for daycare are sensitive to information about the ethnic peer composition in the daycare. Looking at the actual daycare choices of the parents in our sample, we find that their answers in the

survey are generally consistent with their real-world choices in the Copenhagen daycare assignment. This gives us some confidence in the external validity of our results.

The results of our study point to a model of parenting that is of relevance to public policies that seek to implement universal subsidized daycare. In particular, a universal daycare policy must consider the degree of choice given to each parent with respect to selecting their desired daycare. For example, in Copenhagen, Denmark, parents can freely access any public daycare institution subject to an available spot, and, with few exceptions, no parent is given special priority over another parent in competition for these spots. The alternative is to impose much more management over the selection of children into daycares. Our results indicate a trade-off. In an environment where parents generally prefer permissive parenting approaches, social integration within daycares is not a problem, because such parents reveal that they do not fear the existence of minority children in daycares. However, when parents have preferences for daycares that better reflect paternalistic approaches to parenting, the presence of minority children in daycares is also an important concern of these parents. If these attitudes are generally prevalent among parents, the universal daycare policy could require a more managed approach to daycare assignment. Therefore, our findings indicate that the parenting style choice mechanism of Doepke, Sorrenti, and Zilibotti (2019) is relevant for how universal daycare is best implemented.

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A. Appendix. Supplementary Tables and Figures

Table A1: Comparison estimation sample, sample with responses to survey and entire sample

	Estimation sample	Survey response	Total sample
# of observations	2179	2494	4885
Employment			
Mother's employment			
Employed	80.8	77.7	72.3
Student	6.7	6.3	7.1
Not employed	6.8	7.0	11.0
Unknown empl. Status	5.7	9.1	9.5
Father's employment			
Employed	81.9	80.9	76.1
Student	3.5	3.5	4.4
Not employed	5.2	6.2	8.9
Unknown empl. Status	9.3	9.4	10.7
Education			
Mother's education			
No education beyond primary school or unknown	4.0	4.7	8.8
High school, vocational or short further education	20.8	20.5	23.5
College (bachelor level)	29.2	27.7	26.0
Master level	38.2	35.9	29.2
Unknown education	7.8	11.4	12.5
Father's education			
No education beyond primary school or unknown	5.5	5.9	9.9
High school, vocational or short further education	26.3	26.6	28.3
College (bachelor level)	20.5	19.7	17.9
Master level	34.0	33.1	27.7
Unknown education	13.7	14.6	16.3
Family type			
Nuclear family	90.7	90.7	86.8
With mother and partner	2.0	2.0	2.5
With single mother	6.9	7.0	10.1
With father and partner	0.0	0.0	0.0
With single father	0.3	0.4	0.5
Ethnic background			
Ethnic Dane	89.0	86.8	84.0
Ethnic minority	11.0	13.2	16.0

Table A2: Balancing test of background characteristics across treatment categories

	AllDanes_ NoProf	MinoFree_ NoProf	MinoStruc_ NoProf	AllDanes_ Prof	MinoFree_ Prof	MinoStruc_ Prof	NoNames
Single parent	0.053	0.085	0.081	0.063	0.051	0.052	0.064
Child is boy	0.514	0.522	0.514	0.495	0.511	0.489	0.460
Mother primary school	0.116	0.126	0.094	0.126	0.141	0.114	0.109
Mother college education	0.671	0.683	0.688	0.672	0.659	0.651	0.691
Low income family	0.188	0.188	0.171	0.192	0.158	0.147	0.151
Mother works	0.793	0.799	0.773	0.801	0.826	0.837	0.830
Child in poor health	0.009	0.034**	0.013	0.022	0.016	0.026	0.006
Child low birthweight	0.009	0.021	0.019	0.013	0.016	0.026	0.010
Child has handicap	0.013	0.021	0.016	0.019	0.032*	0.013	0.013
Child is non-western	0.129	0.154	0.131	0.170	0.154	0.107	0.154
Father responded to survey	0.235	0.287	0.227	0.233	0.251	0.254	0.283
District high non-west. Pop.	0.436	0.440	0.427	0.464	0.428	0.482	0.466
District low church member share	0.103	0.130	0.081	0.145	0.129	0.140	0.125
District on official ghetto list	0.022	0.041	0.031	0.054**	0.029	0.049*	0.051*
District high share pop. voters	0.075	0.072	0.084	0.085	0.077	0.088	0.061

Note: All balancing tests are two-sided t-tests against column 1, the *AllDanes_NoProf* category. *** p<0.01, ** p<0.05, * p<0.1.

Table A3: Characteristics of respondents preferring free-play and structured daycares

	Free-play		Structured		t-test
	mean	sd	mean	sd	p-value
Mother primary school	0.085	0.279	0.228	0.420	0.000
Mother college education	0.709	0.454	0.555	0.497	0.000
Mother works	0.829	0.376	0.737	0.440	0.000
Child in poor health	0.012	0.108	0.038	0.192	0.000
Child is non-western	0.101	0.301	0.285	0.452	0.000
Father responded to survey	0.233	0.423	0.317	0.466	0.000
District on official ghetto list	0.032	0.175	0.066	0.249	0.000
District low church member share	0.113	0.316	0.152	0.360	0.020
Child is boy	0.512	0.500	0.463	0.499	0.050
Single parent	0.060	0.238	0.078	0.269	0.150
Child low birthweight	0.014	0.119	0.022	0.147	0.230
Low income family	0.173	0.378	0.164	0.371	0.670
Child has handicap	0.019	0.135	0.016	0.126	0.720
District high share of pop. voters	0.077	0.266	0.080	0.272	0.800
District high non-western pop share	0.448	0.497	0.451	0.498	0.920
N	1680		499		

Note: The differences in characteristics between structured and free-play are tested using double-sided t-tests.

Table A4: Probability of preferring structured daycare

	prob(Structured)
Single parent	0.0711
	(0.0366)
Child is boy	-0.0273**
	(0.0174)
Mother no education beyond primary	0.135***
	(0.0334)
Mother college education	-0.0248
	(0.0224)
Low income family	-0.136***
	(0.0273)
Mother works	-0.0626**
	(0.0264)
Child in poor health	0.243***
	(0.0658)
Child low birthweight	0.0388
	(0.0698)
Child has handicap	-0.0499
	(0.0654)
Child is non-western	0.204***
	(0.0286)
Father responded to survey	0.0511*
	(0.0203)
District high non-western pop share	-0.0234
	(0.0474)
District low church member share	0.0610
	(0.0361)
District on official ghetto list	-0.0182
	(0.0598)
District high share of populist voters	-0.0513**
	(0.0368)
Constant	0.254***
	(0.0438)
Observations	2,179
R-squared	0.093
Controls	YES
District FE	YES

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A5: Treatment Effects interacted with selected background characteristics.

Panel A	Treatment interacted with *X*:					
	Interaction with mother's characteristics			Interaction with child characteristics		
	(1)	(2)	(3)	(4)	(5)	(6)
	X: Mother has college	*X*: Mother only prim. school	*X*: Mother is working	*X*: Child is boy	*X*: Child has low birthweight	*X*: Child of non-Western background
MinoFree	0.0462	-0.00910	0.00454	-0.0162	-0.00387	0.0114
	(0.0402)	(0.0246)	(0.0522)	(0.0328)	(0.0232)	(0.0250)
MinoStruc	-0.0380	-0.0427*	-0.115**	-0.0475	-0.0442*	-0.0371
	(0.0397)	(0.0242)	(0.0510)	(0.0322)	(0.0230)	(0.0245)
NoNames	0.102**	0.0130	0.0806	-0.0179	0.0276	0.0377
	(0.0498)	(0.0297)	(0.0662)	(0.0387)	(0.0281)	(0.0304)
MinoFree*X	-0.0723	0.0528	-0.00820	0.0272	0.0635	-0.0908
	(0.0491)	(0.0692)	(0.0581)	(0.0460)	(0.197)	(0.0642)
MinoStruc*X	-0.0122	-0.0371	0.0859	0.00229	-0.110	-0.0629
	(0.0485)	(0.0724)	(0.0569)	(0.0455)	(0.189)	(0.0674)
NoNames*X	-0.111*	0.115	-0.0654	0.0926*	-0.177	-0.0780
	(0.0601)	(0.0885)	(0.0731)	(0.0562)	(0.282)	(0.0777)
Constant	0.240***	0.269***	0.278***	0.278***	0.267***	0.260***
	(0.0504)	(0.0460)	(0.0532)	(0.0480)	(0.0459)	(0.0461)
Observations	2,179	2,179	2,179	2,179	2,179	2,179
R-squared	0.099	0.098	0.099	0.098	0.097	0.097
Controls	YES	YES	YES	YES	YES	YES
District FE	YES	YES	YES	YES	YES	YES
F-tests (p-values)						
MinoFree + MinoFree*X	0.336	0.744	0.986	0.835	0.941	0.366
MinoFree + MinoStruc*X	0.124	0.106	0.041**	0.126	0.112	0.089*

Panel B	Treatment interacted with *X*:					
	Interaction with mother's characteristics			Interaction with child characteristics		
	(1)	(2)	(3)	(4)	(5)	(6)
	X: Family has low income	*X*: Father is respondent	*X*: District high share of non-Westerners	*X*: District low share of church members	*X*: District on ghetto list	*X*: District high share of voters for populist right-wing parties
MinoFree	0.00336	0.00605	-0.00745	0.00494	0.000444	0.000493
	(0.0254)	(0.0265)	(0.0308)	(0.0246)	(0.0234)	(0.0239)
MinoStruc	-0.0372	-0.0581**	-0.0606**	-0.0500**	-0.0443*	-0.0478**
	(0.0251)	(0.0261)	(0.0307)	(0.0242)	(0.0232)	(0.0238)
NoNames	0.0373	0.0429	0.0610	0.0245	0.0324	0.0334
	(0.0306)	(0.0327)	(0.0380)	(0.0300)	(0.0287)	(0.0290)
MinoFree*X	-0.0308	-0.0326	0.0116	-0.0564	-0.0742	-0.0364
	(0.0599)	(0.0531)	(0.0463)	(0.0691)	(0.123)	(0.0859)
MinoStruc*X	-0.0510	0.0491	0.0315	0.0365	-0.0530	0.0168
	(0.0604)	(0.0535)	(0.0458)	(0.0709)	(0.118)	(0.0825)
NoNames*X	-0.0680	-0.0621	-0.0759	0.0119	-0.142	-0.120
	(0.0761)	(0.0634)	(0.0562)	(0.0848)	(0.134)	(0.113)
Constant	0.262***	0.266***	0.268***	0.266***	0.266***	0.266***
	(0.0463)	(0.0466)	(0.0470)	(0.0461)	(0.0459)	(0.0460)
Observations	2,179	2,179	2,179	2,179	2,179	2,179
R-squared	0.097	0.098	0.098	0.097	0.097	0.097
Controls	YES	YES	YES	YES	YES	YES
District FE	YES	YES	YES	YES	YES	YES
F-tests (p-values)						
MinoFree + MinoFree*X	0.872	0.825	0.964	0.713	0.830	0.910
MinoStruc + MinoStruc*X	0.091*	0.083*	0.099*	0.117	0.115	0.123

Note: OLS regressions. Controls included are dummies for single parent, child is boy, mother's highest education is primary school, mother has college education, low income family, mother works, child in poor health, child low birthweight, child has handicap, child is non-western, father responded to survey, and a number of district dummies for

high non-western population share, low church member share, being on official ghetto list, district high share of voters for populist right-wing parties, and district dummies. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A6: Interaction estimations - Respondent non-Western and district characteristics

	Treatments interacted with *X*			
	X: District high share of non-Westerners	*X*: District low share of church members	*X:* District on ghetto list	*X*: District high share of voters for populist parties
MinoFree	-0.00496	0.0174	0.0139	0.00619
	(0.0328)	(0.0265)	(0.0252)	(0.0258)
MinoStruc	-0.0529	-0.0433*	-0.0357	-0.0391
	(0.0323)	(0.0257)	(0.0247)	(0.0253)
NoNames	0.0614	0.0301	0.0390	0.0423
	(0.0405)	(0.0322)	(0.0309)	(0.0312)
MinoFree*ChildNonWest	-0.0141	-0.0945	-0.0986	-0.0403
	(0.0931)	(0.0722)	(0.0682)	(0.0688)
MinoStruc*ChildNonWest	-0.113	-0.0630	-0.0697	-0.0739
	(0.106)	(0.0770)	(0.0740)	(0.0739)
NoNames*ChildNonWest	-0.00252	-0.0389	-0.0479	-0.0620
	(0.119)	(0.0872)	(0.0838)	(0.0832)
MinoFree*X	0.0387	-0.0601	-0.142	0.0777
	(0.0505)	(0.0799)	(0.180)	(0.0999)
MinoStruc*X	0.0368	0.0563	-0.0927	0.0351
	(0.0494)	(0.0829)	(0.194)	(0.0976)
NoNames*X	-0.0531	0.0760	-0.0451	-0.107
	(0.0612)	(0.0979)	(0.188)	(0.135)
MinoFree*ChildNonWest*X	-0.145	0.0194	0.181	-0.418**
	(0.129)	(0.163)	(0.253)	(0.203)
MinoStruc*ChildNonWest*X	0.0489	-0.0680	0.0907	0.00103
	(0.138)	(0.169)	(0.256)	(0.190)
NoNames*ChildNonWest*X	-0.120	-0.225	-0.155	-0.0156
	(0.159)	(0.199)	(0.275)	(0.249)

ChildNonWest*X	0.150*	0.205*	0.0308	0.170
	(0.0912)	(0.120)	(0.173)	(0.133)
Constant	0.269***	0.264***	0.258***	0.260***
	(0.0473)	(0.0463)	(0.0462)	(0.0463)
Observations	2,179	2,179	2,179	2,179
R-squared	0.100	0.100	0.099	0.100
Controls	YES	YES	YES	YES
District FE	YES	YES	YES	YES
F-tests (p-values)				
MinoFree joint test with:				
MinoFree*ChildNonWest	0.965	0.418	0.352	0.842
All interactions with *MinoFree*	0.517	0.566	0.613	0.176
MinoStruc joint tests with:				
MinoStruc*ChildNonWest	0.068*	0.083*	0.112	0.081*
All interactions with *MinoStruc*	0.161	0.210	0.255	0.257

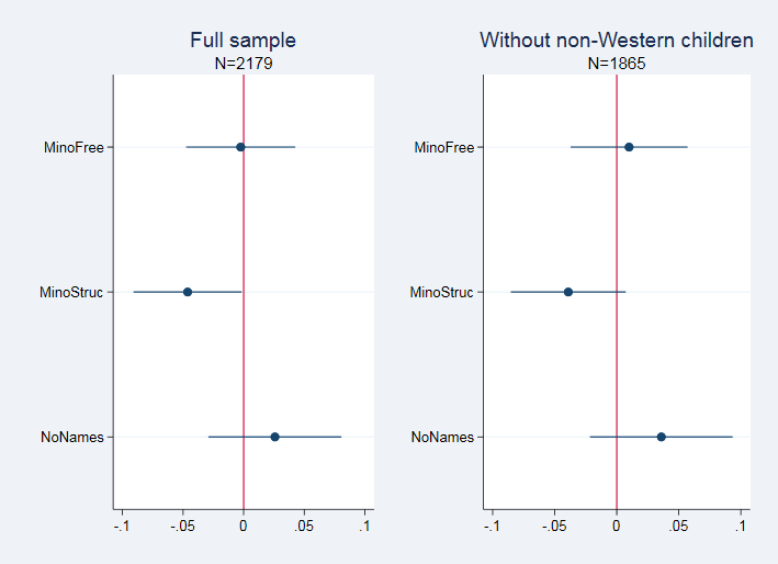
Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A7: Characteristics of daycares favored by respondents who prefer daycare A Structured and B Free-play

	A structured	B free-play	t-test, p-values
Transport from home to daycare	66.5%	66.5%	0.99
Good impression at visit	42.9%	53.6%	0.00
Outdoor facilities and environment	29.2%	36.6%	0.00
Number of children	13.9%	22.1%	0.00
Pedagogical profile	24.0%	20.4%	0.08
Waiting list	16.7%	15.3%	0.45
Siblings in daycare	15.9%	14.2%	0.34
Opening hours	17.7%	11.4%	0.00
Transport from daycare to work	10.5%	8.6%	0.19
Lunch program	7.9%	8.4%	0.71
Forest daycare	2.4%	6.6%	0.00
Education of staff	2.8%	4.7%	0.07
Gender balance of staff	3.2%	4.4%	0.24
Other characteristics	3.8%	3.8%	1.00

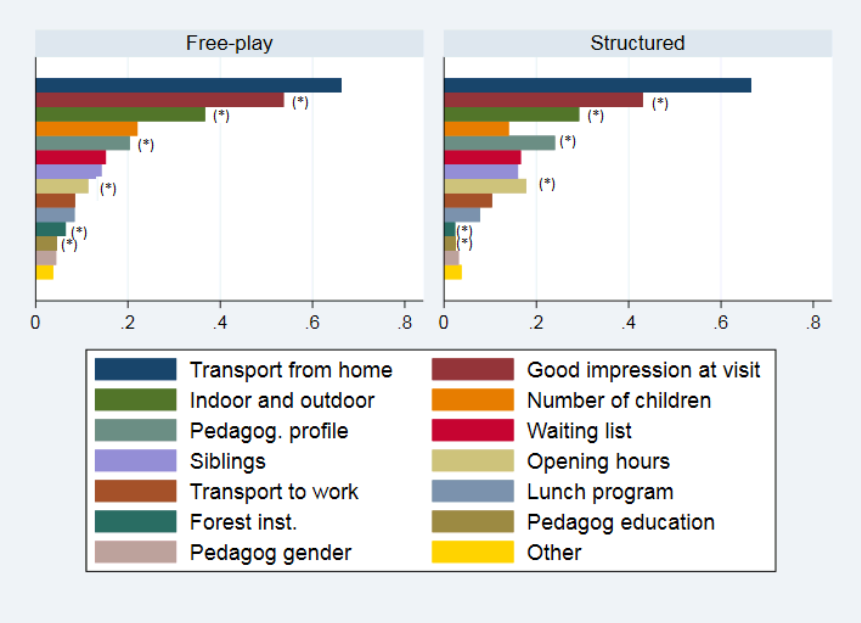
Note: The question asked in the survey was “What factors do you find important when choosing a daycare for your child (more than one response is allowed)”

Figure A1: Comparison between Full sample and Ethnic Majority only sample



Note: This figure illustrates the coefficients from OLS regressions for Equation (2) when the full sample is used (left side) and when non-Western children are excluded (right side).

Figure A2. Characteristics of daycares favored by respondents by preferred daycare type.



Note: (*) indicates that shares are significantly different (p-values below 0.10) across free-play and structured daycare.

B. Appendix. Distance Analysis

Willingness to travel (WTT) to favored choice

In order to further elicit the strength of the preferences for the two types of daycares, structured (A) and free-play (B), we study how parental choices change when a cost is imposed upon the type of daycare they prefer. In our study, the cost is expressed in terms of travel distance. Our intent is to study the value weight each parent assigns to their preferred choice and whether this value varies significantly between parents who prefer the two types of daycares. Many studies in school and neighborhood choice literature have documented that people move residences or schools to avoid racial minorities. For example, Krysan, Couper, Farley & Forman (2009), Van Ham & Clark (2009), Lewis, Emerson & Klineberg (2011), Ibraimovic & Masiero (2014), Andersen (2017), and Müller, Grund & Koskinen (2018) have shown evidence across country on racial biases in neighborhood choices. And Saporito & Lareau (1999); Billingham & Hunt (2016); Goyette, Farrie & Freely (2012) have documented racial segregation in school choices. To get a sense of how far parents in our sample are willingness to travel to avoid racial minorities, we ask them the following question:

"*If A-type (B-type) daycare is your preferred institution, imagine it being further away than the other type, B (A), how much further would you be willing to travel to go to your preferred institution?*"

We observe the demand of structured and free-play daycare in several distance intervals: 0-200m, 200-400m, 400-800m, 800m-1.6km, 1.6-3.2km, "Would not consider other than preferred" or "Do not know or no answer". Table B1 summarizes the responses; columns 1-2 are responses for those who prefer the structured daycare, and columns 3-4 for those who prefer the free-play daycare. As the responses given in the category "Would not consider other than preferred" can be interpreted in several ways, it is not immediately clear on how to assign a numerical value to this category. We therefore drop respondents from this category in the distance analysis, along with respondents who answered "Do not know or no answer". For the remaining five distance intervals, where parents indicated the maximum distance they are willing to travel in order to keep their children in the preferred type of daycare, we find that on average, parents who prefer free-play daycare are willing to travel for a longer distance compared to parents who prefer structured daycare. The median WTT is 800-1600 meters for both groups, and the weighted average WTT is 800-1,300 meters (depending on how values are chosen for each distance interval, i.e. if we use mid-point or top-point of each interval). The unconditioned differences in WTT across the two groups, A and B, are small.

Table B1: Willingness-to-travel (WTT) for preferred daycare for the two daycare types.

	A - Structured – is preferred		B - Free-play – is preferred	
	Number	Percent	Number	Percent
0-200m	45	9.2	61	3.7
200-400m	71	14.5	188	11.3
400-800m	115	23.5	464	27.9
800m-1.6km	117	23.9	473	28.4
1.6-3.2km	35	7.1	140	8.4
Would not consider other than preferred	96	19.6	324	19.5
Do not know or no answer	11	0.4	14	0.8
Number of respondents to question	490	100	1,664	100
Weighted average of distances				
- Top distance in interval*	1,119		1,255	
- Midpoint distance in interval**	833		939	

Notes: *) Average based on top distance in each distance interval, **) Average based on midpoint in each distance interval. Respondents from "Would not consider other than preferred" and "Do not know or no answer" categories are not included in the weighted average calculation.

To facilitate a better understanding of the WTT measure, we convert the distance to monetary values using the estimated travel time to daycare every day for each distance interval and the average hourly wage (after tax) for parents in our sample.

Distance Measures	Estimated Daily Travel Time (minutes)	Corresponding Monetary Values (in DKK)
0-200m	5	12.5
200-400m	10	25
400-800m	20	50
800m-1.6km	40	100
1.6-3.2km	80	200

Notes: The average hourly wage after tax used in this calculation is 150 DKK. For example, for distance interval 0-200m, the corresponding monetary value is calculated as follows: 5/60 hour * 150 DKK/hour = 12.5 DKK. This means that on average parents who choose to switch at this distance interval are willing to pay up to 12.5 DKK per day to keep their children in the preferred type of daycare.

The weighted average of all parents' WTT in monetary terms is: 74 DKK per day (average over parents across the two groups, A and B). This means that on average parents are willing to pay up to 74 DKK per day to keep their children in their preferred type of daycare.

Figure B1 and B2 show WTT for parents who prefer structured daycare and free-play daycare under each treatment (except our "check" treatment 0: *NoNames*), respectively.

We now move on to estimate the differences in WTT in a framework where we can control for differences in background characteristics of the parents. We model the (natural log of) willingness to travel distance, *WTT*, as a function of our randomized treatments and a number of controls, including a control for whether the respondent initially preferred structured or free-play daycare.

$$WTT_i = \beta_0 + \beta_1 Structured + \beta_2 MinoFree_i + \beta_3 MinoStruc_i + \beta_4 NoNames_i + \beta_5 Structured * MinoFree_i + \beta_6 Structured * MinoStruc_i + \beta_7 Structured * NoNames_i + \gamma X_i + e_i \quad (11)$$

We estimate the model by OLS. As respondents were asked to choose between distances in a number of distance intervals, we chose the top distance in each interval as the WTT if the respondent had marked that interval. For the top interval without an upper limit, we chose to limit WTT to 6,400 meters, using as dependent variable the natural log for WTT in the estimation.[26] Table B2 below shows the estimates from this regression. The base is the *Free-play* category with all Danish names.

Table B2: Estimation of willingness-to-travel for preferred daycare, equation (11)

	(1)	(2)	(3)	(4)	(5)
Structured	-0.189***	-0.186***	-0.303***	-0.303***	-0.296***
	(0.0415)	(0.0416)	(0.0748)	(0.0748)	(0.0751)
MinoFree		0.00527	-0.0489	-0.0489	-0.0444
		(0.0457)	(0.0523)	(0.0523)	(0.0524)
MinoStruc		0.0413	0.0245	0.0245	0.0266
		(0.0457)	(0.0514)	(0.0514)	(0.0515)
NoNames		0.000321	-0.0588	-0.0588	-0.0625
		(0.0560)	(0.0642)	(0.0642)	(0.0643)
Structured*MinoFree			0.227**	0.227**	0.214**
			(0.107)	(0.107)	(0.107)
Structured*MinoStruc			0.0559	0.0559	0.0434
			(0.112)	(0.112)	(0.113)
Structured*NoNames			0.245*	0.245*	0.252*
			(0.131)	(0.131)	(0.131)
Constant	6.916***	6.903***	6.931***	6.931***	6.926***
	(0.0196)	(0.0335)	(0.0366)	(0.0366)	(0.0712)
Observations	1,719	1,719	1,719	1,719	1,719
R-squared	0.012	0.012	0.016	0.016	0.027
Controls	NO	NO	NO	YES	YES
District FE	NO	NO	NO	NO	YES

Note: Estimated by OLS on log of distance in meters. Base is the *AllDanes* preferring the *Free-play* category. Controls included in columns 4-5 are dummies for single parent, child is boy, mother's highest education is primary school, mother has college education, low income family, mother works, child in poor health, child low birthweight, child has handicap, child is non-western, father responded to survey, and a number of district dummies for high non-western population share, low church member share, district being on official ghetto list, district high share of populist party voters. Estimates in column 5 include local district dummies. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

In general, willingness-to-travel (WTT) to the preferred daycare is lower if one initially chose the structured rather than the (baseline) free-play daycare.[27] This result also holds when including the full set of controls in columns 4-5 of Table B2. Effect sizes suggest that the WTT for the preferred choice is around 30% higher if the respondent had initially chosen free-play rather than structured daycare in the estimation with full set of controls (column 5).

Introducing in column 2 the randomized treatments, *MinoFree*, *MinoStruc* and *NoNames*, has no significant effect on WTT. However, when interacting the treatments with the dummy for *Structured* in column 3, we observe a positive and significant effect of *Structured*MinoFree*.[28] This suggests that parents with a preference for structured daycare have a higher willingness to travel to their favored (structured) daycare rather than accepting a closer free-play daycare with minority children. The WTT for these parents is around 17% (=-0.044%+0.214%) higher than for other parents. There are, however, no significant effects in WTT across treatment for parents who initially preferred free-play daycare.

The results we find from the WTT analysis are consistent with our main results and theoretical predictions. Let us consider the case in which a minority parent provides a testimonial for the free-play daycare. Here, our analysis showed that the parents' daycare choice remains the same. In addition, we concluded that those who choose the structural daycares are more likely to have discriminatory attitudes towards minority. The theoretical model predicts that these parents' utility from choosing the free-play daycare goes down while the utility from choosing the structured daycare remains the same. Thus, the WTT for these parents must go up. On the other hand, the parents who choose the free-play daycare do not have discriminatory attitudes. Thus, their WTT should not change. As a result, *Structured*MinoFree* (but not *MinoFree*) being positive and significant is consistent with the results we have already found. Let us now consider the case in which a minority parent provides a testimonial for the free-play daycare. Those who choose the structured daycare do not have discriminatory attitudes towards minorities. Hence, *Structured*MinoFree* is being non-significant is consistent with our expectations. How about those who choose the free-play daycare? This case is much more complex. Based on our empirical and theoretical results, this group consists of two types of parents: those who would have chosen the free-play daycare if all the testimonials were from Danish parents, and those who would have chosen the structured daycare if all the testimonials were from Danish parents (but now switched to the free-play daycare). The WTT for the former group should not change given that if they do not have discriminatory attitudes. For the second group of parents, the utility from the free-play daycare remains the same while the utility from the structured daycare goes down. Because their choice changed, it is impossible to predict how the WTT for second group should change. In addition, the WTT for those who choose the free-play daycare is higher. Thus, our empirical and

theoretical results do not offer any guidance on how the WTT should change for those who choose the free-play daycare when there is a minority testimonial for the structured daycare. [1]

Finally, let us explore the price the parents be willing to pay to avoid the daycare with a minority child. Given our previous results from our main as well as the WTT analysis, we will exclusively focus on the parents who choose the structured daycare. In addition, we work with the reduced form (indirect) utility function which assumed to be quasilinear in money (or distance). The utility from any daycare depends on whether the daycare has a minority child or not. Formally, $u(S, m)$ where S is either $S_{FreePlay}$ or $S_{Structured}$ and m is the indicator function specifying whether the daycare has a minority child or not. In addition, let the price the parents willing to pay to avoid the daycare with a minority child be P. In other words,

$$u(S, 1) = U(S, 0) - P.$$

We will exploit the WTT in two treatments, specifically in the one in which all the testimonials come from Danish parents and the one in which one minority parent provides a testimonial for the free-play daycare. We denote the former WTT by WTT_{AD} and the latter one by $WTT_{MinoFree}$. Then we find that

$$u(S_{Structured}, 0) = u\big(S_{FreePlay}, 0\big) + WTT_{AD}$$

$$u(S_{Structured}, 0) = u\big(S_{FreePlay}, 1\big) + WTT_{MinoFree} = U\big(S_{FreePlay}, 0\big) - P + WTT_{MinoFree}.$$

By combining the two equations above we find that

$$P = WTT_{MinoFree} - WTT_{AD}.$$

Our regression analysis gives that WTT in the treatment where one testimonial is from a minority parent is 17% higher than WTT in the treatment where all the testimonials are provided by Danish parents. Therefore, we find that

$$P = 0.17WTT_{AD}.$$

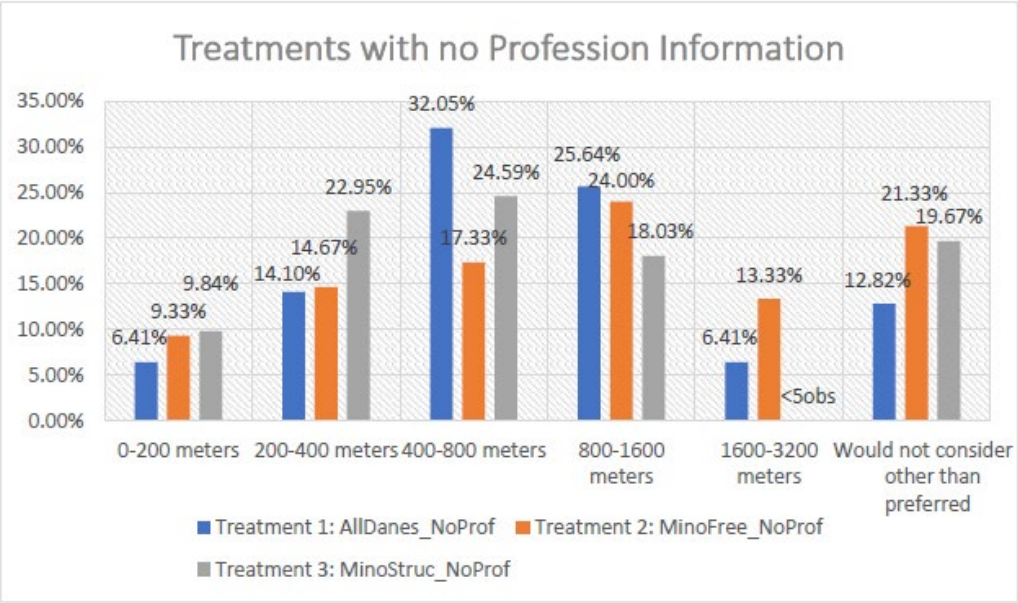
---

[1] If we assign 4.8km to the "would not consider any other than preferred," then the magnitude of the coefficients change but the sign and significance levels remain largely unchanged.

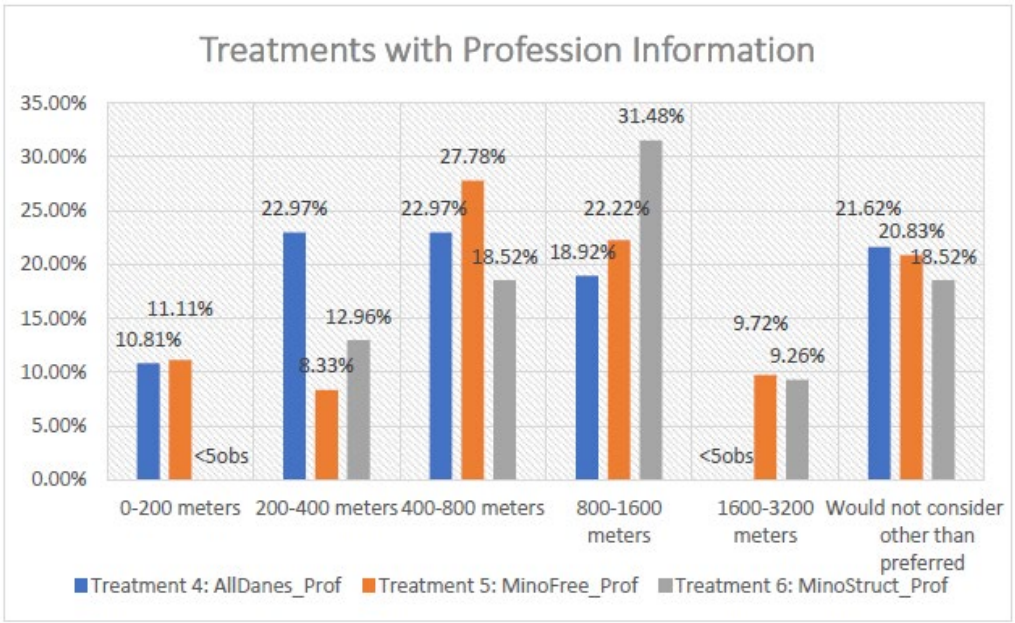
In our data, WTT_{AD} is 967 meters in terms of distance and 60.5 DKK in monetary value. Thus, the parents who choose the structured daycare are willing to spend 10.27 DKK or about 2 USD per day to avoid a daycare with a minority child using the exchange rate in 2014.

Figure B1: Willingness to travel for parents who prefer structured daycare

Panel A. Treatments with no profession information



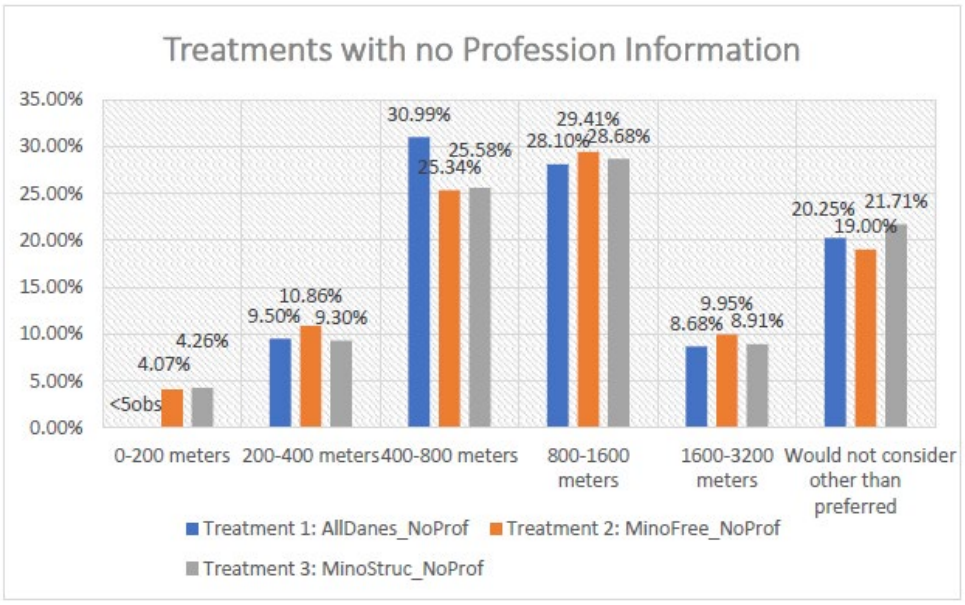
Panel B. Treatments with Profession Information



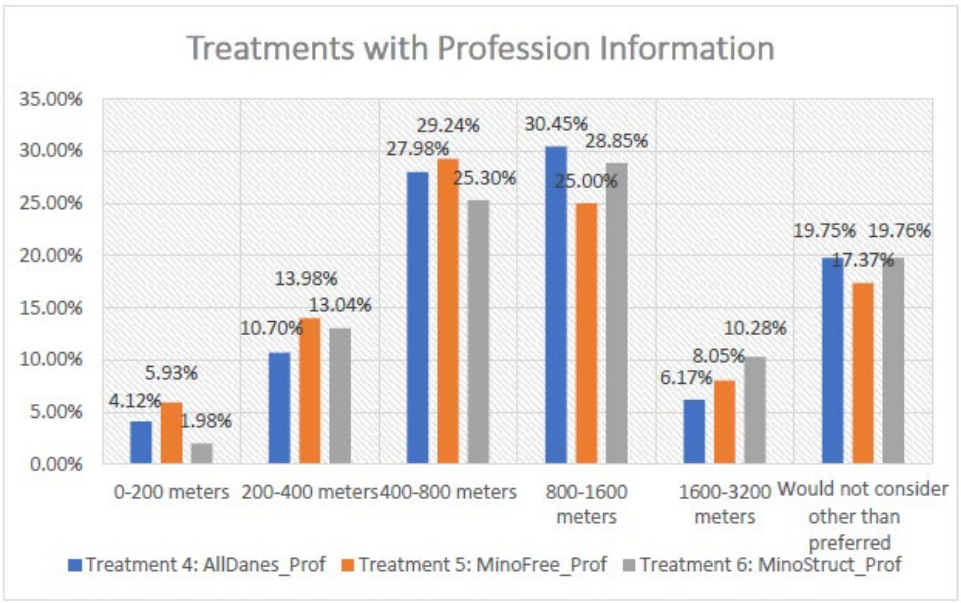
Note: Panel A plots WTT for parents who prefer structured daycare under treatment 1, 2 and 3 where the profession of the testifying parents is not given, and Panel B shows similar comparisons across treatments where information on profession was given to respondents.

Figure B2: Willingness to travel for Parents who prefer free-play daycares

Panel A. Treatments with no profession information



Panel B. Treatments with profession information



Note: Panel A plots WTT for parents who prefer free-play daycare under treatment 1, 2 and 3 where the profession of the testifying parents is not given, and Panel B shows similar comparisons across treatments where information on profession was given to respondents.

C. Appendix. Insights from European Values Survey (EVS) 2017

We used the Danish part of the European Values Survey (EVS) to investigate how views on pedagogics and parenting style as well as preferences for peers are linked.

A) Preferences for child qualities (Question 28 in EVS):

"Here is a list of qualities that children can be encouraged to develop at home. Which of these do you find are important? Pick up to five".

Response categories were: a) Good manners, b) Independence, c) Hard work, d) Responsibility, e) Imagination, f) Tolerance and respect towards others, g) Thrift, h) Determination, persistence, i) Christian faith, j) Considerate, k) Obedience, l) None (a check question).

B) Preferences for peers (Question 6 in EVS):

"This is a list of different groups of people. Are there any of these that you would not like to have as your neighbor? Several responses are fine."

Response categories were: a) Persons of other race; b) Alcoholics; c) Immigrants; d) Drug addicts; e) Homosexuals; f) Christians; g) Muslims; h) Jews; i) Romas; j) No, I would not mind having any of these groups as my neighbor.

Factor analysis of discriminatory views and attitudes towards parenting styles

Based on the detailed responses to questions A and B above, we identified through factor analysis two indicators that capture high versus low discriminatory views, on the one hand, and altruistic versus paternalistic views, on the other hand.

We first ran a factor analysis on the responses to all questions concerning favored child qualities. A specification with two factors was chosen based on an inspection of eigenvalues, in combination of the idea of two distinct parenting styles. We found that the first factor outcome was highly – and positively - correlated with a) Good manners, c) Hard work, g) Thrift, i) Christian faith and k) Obedience. Moreover, the second factor score was highly and positively correlated with child qualities such as j) Considerate, e) Imagination, and f) Tolerance. Based on the predicted factor scores, we defined a dummy for individuals with a high (positive) factor reflecting views that are associated with

a more strict parenting style (paternalistic or authoritarian/authoritative views, i.e. features that are also sometimes seen as favoring a more structured approach to parenting).

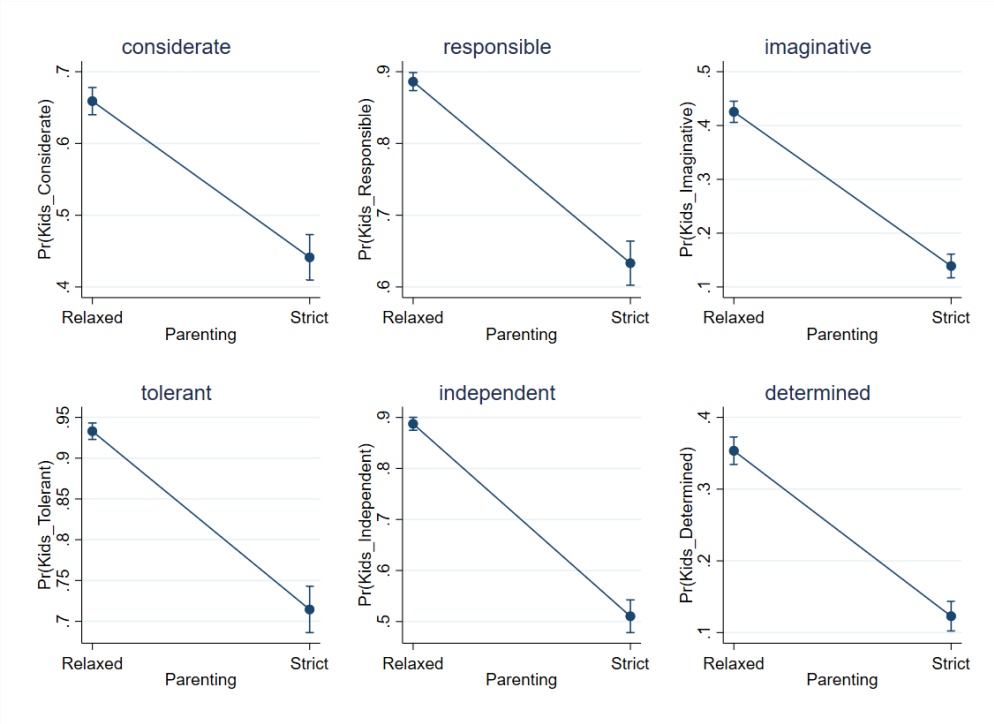
Secondly, we ran a factor analysis on the five characteristics that are associated with discriminatory views: Attitudes towards neighbors of other race, of immigrant background, of Muslim background, of Jewish background and of Romani background. A specification with one factor was chosen as our preferred specification based on inspection of eigenvalues of the factors. Using predicted factor outcomes, we defined a dummy equal to 1 for individuals with high (strictly positive) levels of the discrimination score, corresponding to a good 15 percent of the sample.

Correlation of preferences for child qualities and parenting styles

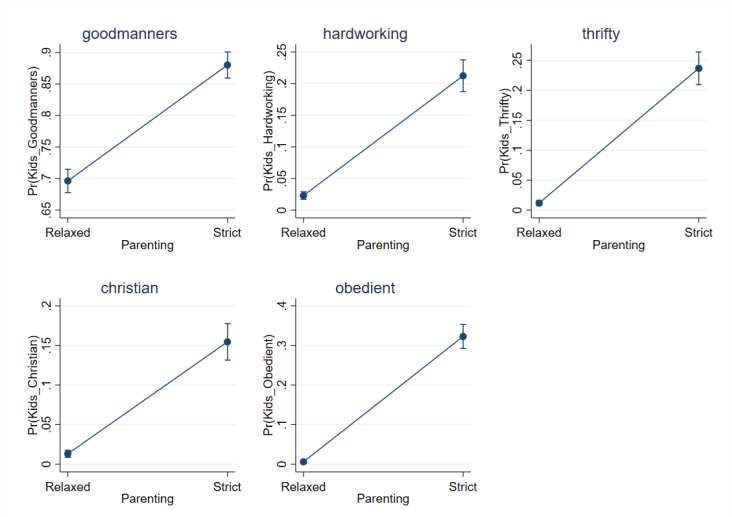
Figure C1 shows how preferences for A) child qualities correlated with the two types of parenting. Panel A of Figure C1 shows that child qualities such as considerate, responsible, imaginative, tolerant, determined and independent were more often picked as important for parents that we label relaxed, permissive or "altruistic" through our factor analysis. Conversely, Panel B of Figure C1 shows that especially good manners, hard work, thrift, Christian faith and obedience scored significantly higher for parents that we label strict or "paternalistic".

Figure C1: About A) Attitudes to child qualities by parenting

Panel A: Views that score higher for individuals with relaxed or permissive parenting style



Panel B: Views that score higher for individuals with strict parenting style

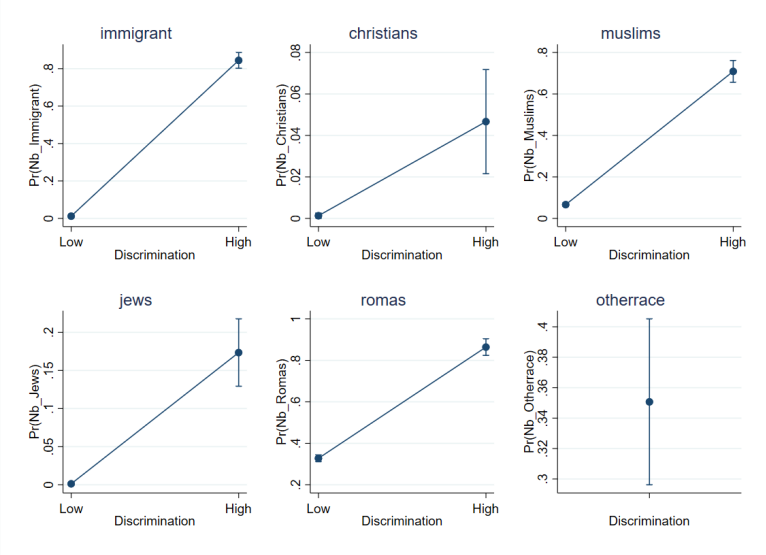


Correlation of preferences for peers (neighbors) and discriminatory views

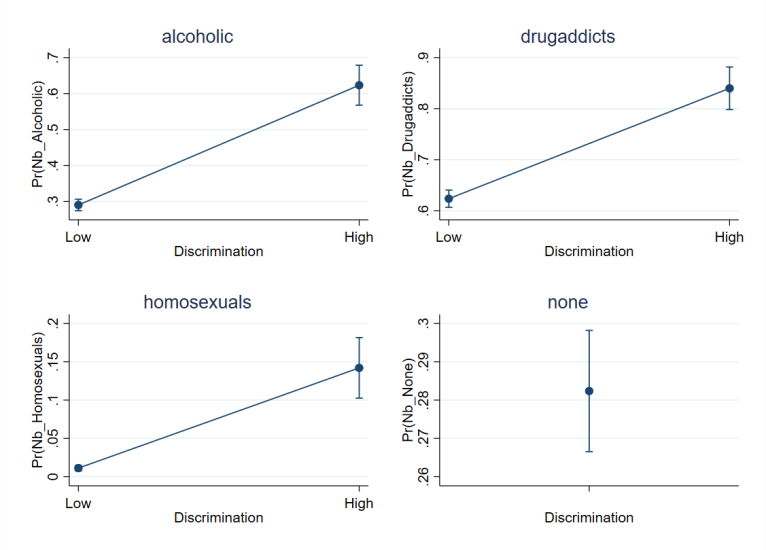
Figure C2 shows how preferences for ethnicity and other characteristics of neighbors correlate with our indicator for discriminatory views. In particular, Figure C2, Panel A, shows that opposition against having a) Persons of other race, c) Immigrants, g) Muslims, h) Jews, and i) Romas is more widespread among people whom we label "discriminatory" in our factor analysis than the opposite. Both types of groups show some reservations against having b) Alcoholics, or d) Drug addicts as neighbors, while reluctance towards having homosexuals as neighbors is more widespread among people with that we label as discriminatory through our factor analysis.

Figure C2: About B) Attitudes to neighbors

Panel A: Views associated with ethnic background of neighbors



Panel B: Views associated with other minority characteristics of neighbors

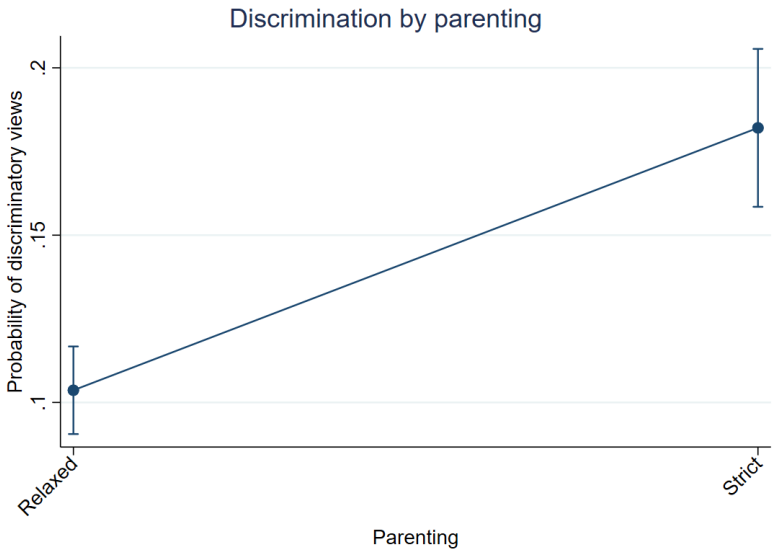


Correlation between parenting views and discrimination

Finally, we investigated the direct correlation between discriminatory attitudes towards neighbors and views on parenting as captured by our two indicator variables obtained through the

factor analysis. We estimated the association through a logit estimation, controlling for gender and age of respondent. We used bootstrapped standard errors as both the dependent and independent variable were constructed variables based on a factor analysis estimation. The predicted margins resulting from this estimation are shown in Figure C3 below. We observe that discriminatory views are significantly more likely among individuals that share strict (paternalistic) views on parenting and child qualities. While around 10% of people with more relaxed (permissive) views on parenting principles were likely to dislike neighbors of minority background, this percentage was around 18% for people with paternalistic views on parenting.

Figure C3: Correlation between parenting views and discriminatory views



Note: The graph is based on a logit estimation of having discriminatory views as a function of a preference for paternalistic parenting. We control for gender and age. Standard errors are bootstrapped with 100 replications.

[1] More segregated schools naturally limit students' exposure to diversity. Recent empirical evidence demonstrates that exposure to diversity reduces bias against ethnic minorities and increases interracial ponding (Boisjoly, J., Duncan, G. J., Kremer, M., Levy, D. M., & Eccles, J., 2006; Dobbie, W., & Fryer Jr, R. G., 2015; Carell, Hoekstra, & West, forthcoming).

[2] The city of Copenhagen is a particularly good case for our study since it (i) operates a centralized assignment mechanism that gives parents a free choice over all daycares in the city subject to capacity constraints and (ii) offers a diverse set of independently managed, publicly funded daycare facilities that match the diverse needs of its parents and their children. Given the nature of this assignment mechanism, the city does not directly control the peer composition at each daycare (Kennes et al., 2014). In general, the centralized assignment mechanism solves the problem of capacity constraints by always assigning a higher priority to the parent who has chosen a particular daycare facility to the oldest child in the queue.

[3] The survey, which was developed in consultation with the city of Copenhagen, asked parents a broad battery of questions into their preferences and actual choices regarding daycares for their young children. We were able to compare some of the statements made in the survey to actual choices of daycares, thus verifying survey responses. See section 5.

[4] Two daycares were labeled as A versus B, not as "structured" versus "free-play". However, the description made a clear distinction in how structured their pedagogy was. The full description of daycares can be seen in Table 1.

[5] In Denmark, 14 percent of the population are immigrants or descendants. Muslims are the largest minority group.

[6] The achievement gap in education as well as strong ethnic segregation in primary schools has been documented for a number of European countries, including Britain (Dustmann, Machin, & Schönberg, 2010), France, Germany (Algan, Dustmann, Glitz, & Manning, 2010) and Denmark (Rangvid, 2007)

[7] Previously, pedagogical assistants were often unskilled workers, who over time would receive some additional training. In recent years, however, vocational education for pedagogical assistants has been initiated. The program lasts 3-4 years with enrollment normally taking place immediately after lower secondary school.

[8] In 3 out of 4 cases, the mother answered the questionnaire.

[9] Before running the survey, we discussed the survey and its questions extensively with staff from the administrative unit in Copenhagen that is responsible for the allocation of daycare spots to parents. Moreover,

in cooperation with Statistics Denmark, we conducted a careful pilot study to test the relevance of the questionnaire and check whether the questions were seen as meaningful and understandable by potential respondents in the target group of the survey.

[10] The questionnaire included a number of additional questions regarding e.g. how long the child had been breastfeed, length of maternity and paternity leave, intra-household allocation of housework and childcare, the family's employment situation and expectations for the future.

[11] We verify that survey responses are consistent with actual choices in section 5.

[12] This question is one of many similar queries in the same section of the survey. Respondents were then asked to choose one of the two for each question in the section. However, only the one question analyzed here is randomized across subjects.

[13] There are 15 districts in Copenhagen's daycare administration setting. These districts vary in terms of e.g., ethnic composition. We control for district level characteristics, including district fixed effects. Our district level characteristics include dummies for whether the district had a high (>10%) non-western population share (about 45% of the sample lived in districts with more than 10% non-Western inhabitants), whether a low share of district inhabitants are church members (around 12% of the sample), whether the district is on the government's official ghetto list (about 4% of the sample), and whether the district had a relatively high share of voters of populist right-wing party parties at last municipality elections (about 8% of the sample).

[14] We also performed all estimations by logit, but the results are very similar to the OLS regressions. For the ease of interpreting the coefficients, especially when including interaction terms, we chose the OLS specification of the model. Results from the logit regressions are available upon request.

[15] See, for example, Bronfenbrenner, U. (1979) and Atzaba-Poria, N., Pike, A., & Deater-Deckard, K. (2004)

[16] Responding households could choose themselves whether the father or the mother would respond to the survey. Households where the father responded are more likely to be of non-western origin.

[17] The results are shown in Table A5 in the appendix, where each column shows the result of a regression where we interacted the treatment variables, *MinoFree*, *MinoStruc*, and *NoNames* with one background variable at a time. In panel A of the table, treatments are interacted with characteristics of the child and the mother, and in panel B, treatments are interacted with a dummy for whether the father responded (by choice) to the survey, household income and four variables that characterize the district in which the family lives.

[18] Doepke and Zilibotti (2017) define four categories of parenting styles. Namely, (i) *Authoritative*: effort to mold child's preferences (with a purpose other than making the child happy); (ii) *Authoritarian*: effort to constraint child's choice (with the purpose other than making the child happy);

(iii) *Neglecting*: minimize parent effort; and (iv) *Permissive*: none of the above. (not influence child's choice, but also not minimize effort).

[19] The focus of Doepke and Zilibotti (2017) and Doepke et al. (2019) is often on the relation between inequality and the choice of parenting style. In a nutshell, unequal societies lead to parents that interfere more. Here, we are looking at parental choices within a city (Copenhagen), so we shift the focus from inequality across different societies to the focus on schooling production based on local peers and intrinsic parental preferences for specific parenting styles.

[20] The literature refers to the low level of paternalism as altruism.

[21] Parents face a trade-off when choosing their parental choice: the strict parenting style implies a cost in the child's well-being, but increases the educational outcome. While it may be debatable that strict parenting increases educational outcomes, for our results, we only need that paternalistic parents perceive it as such.

[22] While the distinction between a strict parenting style from a relaxed one may sometimes be subtle, distinguishing these two styles by the choices of structured versus free play day care is consistent with the measures used by Doepke and Zilibotti (2017). In the proxies they construct for parenting styles, obedience is associated to strict parenting, a trait that is associated to structured schools in our experiments. Independence and imagination are associated to relaxed parenting, which is consistent with the choice of what is understood by a free-play school in our experiments.

[23] This assumption leads to the more formal statement that for a fixed S and $\bar{S}$ there exists a threshold γ, denote it by $\bar{\gamma}$, such that parents for which $\gamma \leq \bar{\gamma}$ choose $P = 0$ and parents for which $\gamma > \bar{\gamma}$ choose $P = 1$.

[24] Clearly, $\Sigma_{\omega \in \Omega} \, Pr(\omega) \; = \; 1$.

[25] We further confirmed the results by quantifying the magnitude of the discrimination. In the survey we asked each parent a willingness to travel (strength of preference) question, where parents were asked to report the additional distance they would be willing to travel to stay with their original choice (structured or free-play). Interestingly, we found that parents who choose structured daycares are willing to travel a longer distance to attend their preferred daycare if the alternative free-play daycare contained a minority parent name than when it contained all Danish names. Thus, willingness to travel to the most favored daycare type is higher if the alternative is a daycare with minority children (and if the favored daycare is a structured daycare). We do not observe this pattern for parents who prefer free-play daycares.

[26] The model was also estimated using ordered logit using the intervals in order of distance.

[27] Comparing the parameter estimate for *Structured* to the constant term which reflects the natural log to WTT for free-play parents, and taking inverse logs, we see that parents who prefer free-play daycare are willing

to travel 200-400 meters longer to their favored daycare than parents who prefer structured daycare depending on the set of included controls for background characteristics and treatments.

[28] We also find that the coefficient of *Structure*NoName* is positive and significant at the 10% level. The treatment where no name is attached to the testimonials is somewhat special in the sense that the parents do not have any information on the ethnic composition of the daycares.