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Unequal Opportunities, Social Groups, and Redistribution: Evidence from the General Population*

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November 2, 2020

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Abstract

In this paper we investigate the generalizability of the role of unequal opportunities and social group membership in redistributive preferences for the general population. We present results from a large-scale online experiment with more than 4,000 participants. The experiment consists of a real-effort task and a subsequent dictator game with native Germans and immigrants to Germany. We find that dictator transfers to the own group by native Germans and immigrants are higher under unequal opportunities than under equal opportunities. While we confirm the main findings reported in previous literature regarding the role of inequality of opportunity in redistribution for native Germans and immigrants, we find distinctively different patterns between both groups concerning the influence of social group membership on redistribution. In particular, immigrant dictators transfer more to in-group than to out-group receivers under unequal opportunities and do not compensate unequal opportunities for out-group members, which we do not find among native dictators. We conclude that in order to increase the understanding of patterns reported in the literature, it is crucial to also investigate the external validity of findings with general population samples and to explicitly cover participants such as immigrants who represent important parts of our society.

JEL: C91, G11, G41

Keywords: online experiment, redistribution, fairness, immigration, opportunities

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1 Introduction

Since the 1980s, inequality in income and wealth has increased sharply in many developed countries (Frick and Grabka, 2009; Saez and Piketty, 2014; Saez and Zucman, 2016). Inequality in terms of income and wealth is associated with more unequal opportunities in society, which affect future generations in particular. For instance, Woessmann (2004), Duncan and Murnane (2011), Corak (2013), Corak (2016), and Scheidel (2017) report income and educational elasticities between generations, which imply that children's income and education are positively correlated with their parents' income and education. Moreover, disadvantages due to unequal opportunities are not only prevalent among children with lower socio-economic status, but also among immigrants, who are often confronted with unequal opportunities from the start (e.g., Schnepf, 2007). In recent years, this social group has been under scrutiny in the U.S. and in some European countries, because of the immigration waves between 2014 and 2017, which have potentially shifted political support toward right-wing and conservative parties (Otto and Steinhardt, 2014; Halla et al., 2017; Davis and Deole, 2018). Such parties typically exhibit preferences for lower social transfers compared to social-democratic parties (Esping-Andersen, 1990; Fuller et al., 1995). This is in line with evidence showing that higher shares of immigrants are associated with decreased support for social transfers and redistribution (Alesina et al., 2020). Overall, recent survey evidence from the general population has demonstrated that the interaction between inequality, social identity and equality of opportunity plays a role in the support of redistribution (Magni, 2020).

Thus, experimentally investigating the influence of unequal opportunities, real social group membership, and their interaction on redistributive behavior in the general population is of utmost social relevance. Therefore, in this study, we examine (i) general attitudes toward redistribution, and specifically, whether these attitudes depend on equal or unequal opportunities for transfer recipients. We also investigate (ii) whether preferences for redistribution under equal and unequal opportunities differ conditional on the group membership of the transfer recipients (i.e., native Germans or immigrants to Germany). In addition, we innovate by not conducting the experiments with student participants, as is most commonly done in the literature on the influence of social group membership and unequal opportunities on preferences for redistribution (e.g., Chen and Li, 2009; Klor and Shayo, 2010; Krawczyk, 2010; Caballero, 2014; Durante et al., 2014; Rey-Biel et al., 2018; Akbaş et al., 2019). Here the behavior in economic experiments can only reasonably be generalized to populations that have specific characteristics in common with student participants (young age, higher education, etc.). For instance, Bellemare and Kröger (2007) and Anderson et al. (2013) find that student participants are not sufficiently representative of the general population. Rather, we analyze the redistributive behavior of the general population and especially the behavior of real social groups such as the strata of natives

and immigrants to Germany, thus taking a further step toward the field.

Germany is a suitable test bed to increase the external validity of findings on the influence of unequal opportunities and social group membership on redistribution for the following reasons: First, in terms of wealth, Germany is a country with relatively high inequality: The wealth distribution across German households is strongly right-skewed with a mean to median net wealth ratio of approximately 3.3 (Organization for Economic Co-operation and Development (OECD) average is about 2.6; see OECD (2018b); Bundesbank (2019)). Second, Germany has been associated with relatively unequal opportunities regarding education and earnings. This manifests itself in a comparatively low degree of social mobility (Woessmann, 2004; OECD, 2018a). Third, Germany recently experienced a large influx of refugees. Approximately 1.5 million asylum seekers (about 1.86% of the German population based on 2014 data) arrived between 2014 and 2017 (Grote, 2018). In 2016, Germany faced the highest share of asylum applicants per 100,000 inhabitants of all European Union (EU) member countries (Kury and Sławomir, 2018). This sparked an ongoing public debate about immigration and challenges regarding social cohesion. To measure the impact of social group membership (in-group vs. out-group) on redistributive behavior, we selected (i) native Germans without an immigration background over two generations and (ii) first- and second-generation immigrants from non-EU countries. Compared to native Germans, the average immigrant starts with significant disadvantages, which constitute unequal opportunities, due to a multitude of reasons, such as language barriers, cultural segregation, and lack of locally required skill sets (e.g., Schnepf, 2007).

We conducted an online experiment with 4,035 individuals from the German population, native Germans and immigrants, of whom 2,077 participants had the possibility to redistribute an amount of money earned in a real-effort task. The experiment consisted of two stages: In the first stage, we applied an incentivized real-effort task (i.e., the slider task by Gill and Prowse, 2012) to allow participants to earn money. In the second stage, participants were assigned the role of either dictator or receiver in a standard one-shot dictator game. The assignment to one of the two roles depended on the participants' performance in the slider task: The half who performed better than a reference group (the high-score group) was assigned the role of dictators, and the others (the low-score group) were the receivers. Across the first treatment dimension, we varied (i) equal vs. unequal (initial) opportunities in the task. Either all participants had equal opportunities to be in the high-score group, or in the unequal condition, half of the participants had "bad luck" and got six solved sliders deducted from their score. Across the second treatment dimension, we varied (ii) the social group membership of receivers by matching native Germans and immigrants either with another individual from their own "in-group" or the other demographic group ("out-group") in the dictator game.

First, regarding unequal opportunities, we find that native Germans and immigrants

transfer more to in-group receivers under unequal opportunities than under equal opportunities. Additionally, under unequal opportunities, we make a distinction between dictators who were disadvantaged (those who had bad luck and still made it into the high-score group of the real-effort task) and those who were not, to isolate the willingness to compensate the presence of unequal opportunities for others. For non-disadvantaged dictators of both social groups, we find causal evidence for a preference to compensate the existence of unequal opportunities for others, because non-disadvantaged dictators transfer greater amounts to in-group receivers under unequal opportunities than dictators under equal opportunities. Moreover, similar to their non-disadvantaged peers, we find evidence that even disadvantaged dictators from both groups transfer more to the in-group under unequal opportunities than decision makers under equal opportunities. Second, regarding social group membership, we show that native and immigrant dictators do not transfer statistically different amounts to out-group members compared to in-group members under equal opportunities. Nevertheless, in contrast to native dictators, immigrant dictators transfer more to the in-group (fellow immigrants) than to the out-group (native Germans) under unequal opportunities. Additionally, as opposed to native dictators, immigrant dictators do not compensate unequal opportunities for out-group members.

Thus, the research design, addressing different societal groups, leads to new insights, increasing external validity and improving the understanding of the relevance of overall societal complexity. To the best of our knowledge, this study represents the first large-scale experiment on redistribution among the general population in Europe, involving a sample of immigrants as a distinct social group that is often exposed to unequal opportunities in real life. The study combines the external validity of a survey that is based on a large representative sample consisting of real social groups with the internal validity of an experiment based on incentivized real-effort choices and a parsimonious design.

2 Experimental Design and Procedure

2.1 Task, Dictator Game and Treatments

We designed an online experiment consisting of two stages. In the first stage, we applied the slider task by Gill and Prowse (2012). After practicing, participants saw 48 horizontally shifted sliders that ranged from 0 to 100, and participants had to place as many as possible on a value of 50 within two minutes (see the instructions in the Appendix for a screenshot).[1]

After the slider task, participants were assigned the role of either dictator or receiver in a dictator game, depending on their performance in the slider task. To arrive at a benchmark for high-score group membership and low-score group membership, we sampled a pre-wave of 200 individuals in December 2018. One hundred were native Germans, and the other 100 were immigrants to Germany. The participants of this pre-wave performed only the slider task. The statistical properties of their performance served as the benchmark in the main experiment. The median of correctly placed sliders in this pre-wave was 9.5. Participants who correctly placed 10 or more sliders in the main experiment reached the high-score group and were assigned the role of dictator (receiving €12 as payoff for the slider task). Those with 9 or fewer correctly placed sliders ended up in the low-score group and were receivers (earning €0 for the task) in the dictator game.[2] We deliberately study redistributive preferences of individuals with above average effort/performance in the task. This implies that certain characteristics inherent to high-effort or high-ability individuals from the general population can systematically influence transfers in the dictator game. Nevertheless, studying transfer behavior of a group likely being associated with higher income and higher tax payments might be especially relevant for policy makers. Therefore, we assigned only high-performers the role of dictators and did not randomly allocate participants a role in the dictator game.

Figure 1 depicts the between-subject treatment structure. Across the first treatment dimension, we varied (i) whether participants had equal opportunities to be in the high-score group. Under EQOP, all participants had equal opportunities. Under UNOP, half of the participants were randomly (with equal probability) allocated to the group BADLUCK where six sliders were deducted from their personal score after they had finished the slider task. This means that participants in this group effectively needed to solve 16 sliders (10 plus 6) to still become a dictator and receive €12, which constituted unequal initial

[1] This slider task has a number of advantages: First, exerted effort can be controlled by the experimenter. Moreover, the task is straightforward to communicate online and does not require pre-existing knowledge or specific, cognitive skills. Furthermore, the task leaves no scope for guessing, and in contrast to mathematical tasks, the performance in the slider task has been shown to induce less task-related emotions, such as anxiety (Gill and Prowse, 2012; Lezzi et al., 2015; Charness et al., 2018).

[2] Participants did not receive a lump sum payment for their participation.

opportunities.[3] We chose a deduction of six sliders in case of bad luck because the 75th percentile in the pre-wave was 16 (rounded). By deducting six sliders, we ensured that approximately half of the participants who would have received a payoff under EQOP did not receive a payoff with bad luck under UNOP. Therefore, roughly one third of all participants with bad luck and no payoff for the task under UNOP received no payoff because of bad luck, and two thirds because of their inadequate performance.[4] All dictators under UNOP received this objective probability before the dictator game. However, in order to leave some scope for the formation of beliefs, the dictators were not informed about the decisive reason why the receivers assigned to them did not receive any payment. This was done because incomplete information about the sources of inequality constitutes an essential feature of redistribution decisions in the real world. Moreover, Rey-Biel et al. (2018) show that, based on homogeneous information, there can be heterogeneity between cultural groups in beliefs about the sources of inequality, which can influence decisions in dictator games. The beliefs about the sources of inequality are called INTERNAL_BELIEF and were measured after the dictators' decisions. In particular, we asked dictators to indicate whether they believed that the decisive reason for their matched receiver not receiving a payoff was insufficient performance or bad luck.

For the second treatment dimension, we varied (ii) in- and out-group membership of receivers by matching native Germans and immigrants with another participant from either their own demographic group (in-group) or the other demographic group (out-group) in the dictator game. In particular, under OUTGROUP, we paired native dictators and immigrant dictators with members of the other demographic group; that is, native dictators were matched with immigrant receivers and immigrant dictators with native receivers. For INGROUP, we matched native (immigrant) dictators with native (immigrant) receivers. Consequently, the information set under INGROUP and OUTGROUP differed only with

[3] Subsequent to the task under unequal opportunities, all participants were informed whether they had bad luck or not. This information was deliberately given after the task to avoid over-proportional dropout rates of participants with bad luck. A potential limitation, which is unavoidable with the given design, is that the mere knowledge about unequal opportunities might influence exerted effort, which can lead to a different behavior in the dictator game (Cherry et al., 2002). Therefore, we check potential differences in effort between treatments and groups in the results section and control accordingly.

[4] Correspondingly, for approximately 20% of all participants without payoffs under unequal opportunities, the decisive reason for not receiving a payoff was bad luck. Thus, under unequal opportunities, the decisive individual reason for receiving no payoff could have been either bad luck or inadequate performance. For participants who would not have received a payoff with their performance under equal opportunities, the decisive reason for not receiving a payoff with bad luck under unequal opportunities would still be inadequate performance compared to others, irrespective of bad luck. In contrast, for participants who would have received a payoff under equal opportunities, the decisive reason for not receiving a payoff with bad luck under unequal opportunities was bad luck, namely, allocation to the BADLUCK group, which was beyond the individual's control.

Social Group Membership

Opportunities	In-group	Out-group
Equal	EQOP_IN	EQOP_OUT
Unequal	UNOP_IN	UNOP_OUT

Figure 1: Overview of the experimental treatments interacting both dimensions. First dimension: Variation across opportunities in the real-effort task. Second dimension: Variation across the social group membership of receivers. 2*x*2 factorial design with the four between-subject treatments EQOP_IN, EQOP_OUT; UNOP_IN; UNOP_OUT.

respect to the group membership of the assigned receiver.[5]

The information available to all participants before the dictator game contained information on one's own payoff (€12 for dictators and €0 for receivers), information that the matched receiver is older than 18 years of age, and information that the matched receiver is a resident of Germany and member of one's own or the other social group (in-group vs. out-group). Furthermore, we implemented a reminder about whether there were equal or unequal opportunities in the task.[6] Dictators, who all faced advantageous inequality, then had to decide which amount $y \in [0,12]$ of their earned payoff of €12 they would like to transfer to the receiver. Thus, the final payoff for the dictator corresponded to $p_1 = 12 - y$ and the final payoff for the receiver corresponded to $p_2 = y$. To ensure that the results are not driven by reciprocity concerns (Hoffman et al., 1996; Dufwenberg and Kirchsteiger, 2004), we told dictators before the final transfer decision that they had been anonymously and randomly matched with a receiver and that their final payoff depended only on their decision in the dictator game. For practical reasons, the random matching between dictators and receivers took place after the data collection process was completed while taking into account the treatment allocations of participants.

[5] We do not distinguish between in-group favoritism and out-group discrimination with a neutral reference group, but we are interested only in the differences between in- and out-group transfers overall. For a general comparison see e.g., Abbink and Harris (2019).

[6] To minimize experimenter demand effects (or variations) between treatments, all treatment-dependent information was embedded in the general information set which was displayed to each participant. See the translation of the instructions in the Appendix.

2.2 Procedure

In collaboration with Dynata, a survey sampling company, we invited 4,035 inhabitants of Germany of whom 1,996 were native Germans and 2,039 were immigrants. We limited the sample to the working age population, between 18 and 65 years of age. The online experiment was programmed using the software *Qualtrics*, and the experimental language was German (English translations of the instructions are included in the Appendix).

In total, we collected 2,077 dictator observations, of which 991 stem from native Germans and 1,086 from immigrants. We defined and sampled native Germans and immigrants as follows. We refer to native Germans if the participants and both of their parents were born in Germany. We refer to immigrants if individuals were either born outside the European Union themselves or if both of their parents were born outside the European Union. We invited only participants with a migration background from non-EU countries for the sample of immigrants to ensure sufficient cultural heterogeneity and to induce an adequate out-group framing of native Germans compared to immigrants.[7] In order to avoid deception, we did not confront dictators with typically German vs. non-German names of receivers as indication of group membership. Instead, similar to Willinger et al. (2003); Guillen and Ji (2011); Georg et al. (2016), and Barr et al. (2018), we accurately told dictators whether their assigned receiver is a member of the in-group or the out-group, i.e., whether the receiver has an immigration background or not (see the instructions in the Appendix for further details). Based on survey evidence by Eckes (2002), people with an immigration background are viewed as an independent societal group by Germans. Sniderman et al. (2004) show that national identity can evoke exclusionary tendencies toward out-groups. Therefore, we classified immigrants as an out-group for native Germans and vice versa. To increase data quality, we implemented several quiz questions and attention checks in the experiment, which needed to be passed to be able to continue (see the instructions in the Appendix). Anduiza and Galais (2017) find that excluding participants who did not immediately pass attention checks can decrease the data quality. Therefore, we did not screen out participants for giving wrong answers in the attention checks, but let them proceed only once they had given the correct answer. We excluded observations where it was reasonable to assume that participants did not demonstrate an adequate level of attentiveness and seriousness. This applied to all participants who did not position a single slider correctly. Furthermore, we also symmetrically trimmed the sample by excluding participants with the 5% shortest and 5% longest processing times in the experiment. This left 1,734 dictators in total, of whom 757 were native Germans and 977 were immigrants.[8]

[7] Note that the survey sampling company did not provide us with the exact countries of origin of the sampled immigrants.

[8] Results for the full sample are qualitatively similar to the main results reported in this paper and are available upon request.

The average duration in the experiment was 12.00 (SD = 3.77) minutes, and the average payoff was 6.12 Euro. On average, 12.01 (SD = 7.15) sliders were placed correctly in the slider task.

In addition, the participants answered an exit survey[9] on attitudes toward success in life, perceptions of social groups and information on the frequency of social contacts with out-group members in real life. The respondents also provided the following self-reported demographic, geographic and socioeconomic information: age, gender, education, parents' education, profession, federal state of residency, the total population of the town of residency, and gross annual income. Among immigrants, we asked whether the participants are first or second generation immigrants. Furthermore, we also asked participants to self-report their political orientation.

3 Results

3.1 Randomization Checks and Descriptive Statistics

Before analyzing the treatment effects, we examine whether the randomization procedure worked by testing for differences in the self-reported participant characteristics between treatments. We find that there are no statistically significant differences in these characteristics between treatments except for political attitudes of native German participants, which is shown in Table A1 in the Appendix.[10]

Further, we test for structural differences in self-reported characteristics between the sample of native Germans and the sample of immigrants to determine relevant control variables for the analyses. As shown in Table A2 in the Appendix, we find structural and statistically significant differences between native dictators and immigrant dictators with respect to almost all self-reported characteristics. Therefore, the econometric specifications in the results section include control variables for age, gender, income, political preferences, population of the town of residency, education, and parents' education. Additionally, we test for differences in the number of solved sliders between native Germans and immigrants. At the bottom of the Table A2 we show that there are no statistically significant differences in performance between the two groups. Nevertheless, because of the significant performance differences between the treatments, we include the number of solved sliders in the set of control variables. We indicate the usage of the complete set of control variables at the bottom of all the regression tables.

[9] More information on the exit survey is provided in Section A1 in the Appendix.

[10] Moreover, at the bottom of Table A1 we report statistically significant differences in exerted effort (PERFORMANCE) in the task between treatments. Specifically, participants under UNOP correctly position more sliders compared to participants under EQOP.

Table 1: Descriptive statistics for transfers by native Germans and immigrants across treatments. Possible transfers range from €0 to €12. Transfers by native and immigrant dictators to receivers from the same social group are denoted by EQOP_IN under equal opportunities and by UNOP_IN under unequal opportunities. Transfers by native and immigrant dictators to members of the respective out-groups are indicated by EQOP_OUT under equal opportunities and by UNOP_OUT under unequal opportunities.

Transfers	Obs	Mean	SD	Median	Min	Max	95% CI	
Overall	1734	2.22	3.43	2.00	0	12	2.06	2.38
Native Germans	757	2.29	2.67	2.00	0	12	2.10	2.48
Immigrants	977	1.90	3.62	1.00	0	12	1.68	2.13
Native Germans	Obs	Mean	SD	Median	Min	Max	95% CI	
EQOP_IN	168	1.67	1.93	1.00	0	12	1.38	1.96
UNOP_IN	227	2.64	3.01	2.00	0	12	2.25	3.04
EQOP_OUT	150	1.98	2.31	1.00	0	12	1.61	2.35
UNOP_OUT	212	2.70	2.92	2.00	0	12	2.31	3.10
Immigrants	Obs	Mean	SD	Median	Min	Max	95% CI	
EQOP_IN	197	1.70	2.92	1.00	0	12	1.29	2.11
UNOP_IN	297	3.12	3.40	1.00	0	12	2.73	3.51
EQOP_OUT	194	1.47	2.54	1.00	0	12	1.11	1.82
UNOP_OUT	289	1.59	2.49	1.00	0	12	1.30	1.87

Based on census data from the German Federal Office of Statistics, we can infer that the initial sample of non-EU immigrants (participants or both of their parents were born outside the EU) is not entirely representative of the respective population in Germany, primarily concerning age and gender. The initial sample of native Germans (participants and both of their parents born in Germany) is also not entirely representative of their respective population regarding age. Specifically, native individuals aged between 30 and 45 are under-weighted by about six percentage points and individuals aged between 55 and 65 are over-weighted by about six percentage points in the sample. Therefore, we apply a post-stratification approach with age and gender (interlocking) based on the official census data on these two specific populations from the German Federal Office of Statistics to weight observations by participants from under- and over-represented strata accordingly. For the analyses in this paper, we use the post-stratified samples with population sizes of 37,448,000 (native Germans) and 8,000,000 (immigrants) to guarantee a more representative picture of the populations, especially in the joint models. Table 1 shows descriptive statistics for the transfers by both subject pools across treatments[11] and Figure 2 shows the relative distributions of overall transfers by native and immigrant dictators.

[11] The standard deviations of transfers in Table 1 were implicitly calculated by using the estimated confidence intervals.

Due to the large general population sample, which incorporates two distinct groups of native Germans and immigrants, it is insightful to test for associations between transfers in the dictator game and the individual characteristics of the dictators. As the transfers are censored (minimum of 0 and maximum of 12), we apply Tobit regressions to estimate linear relationships. In Table 2, we report the results of a multivariate Tobit regression on

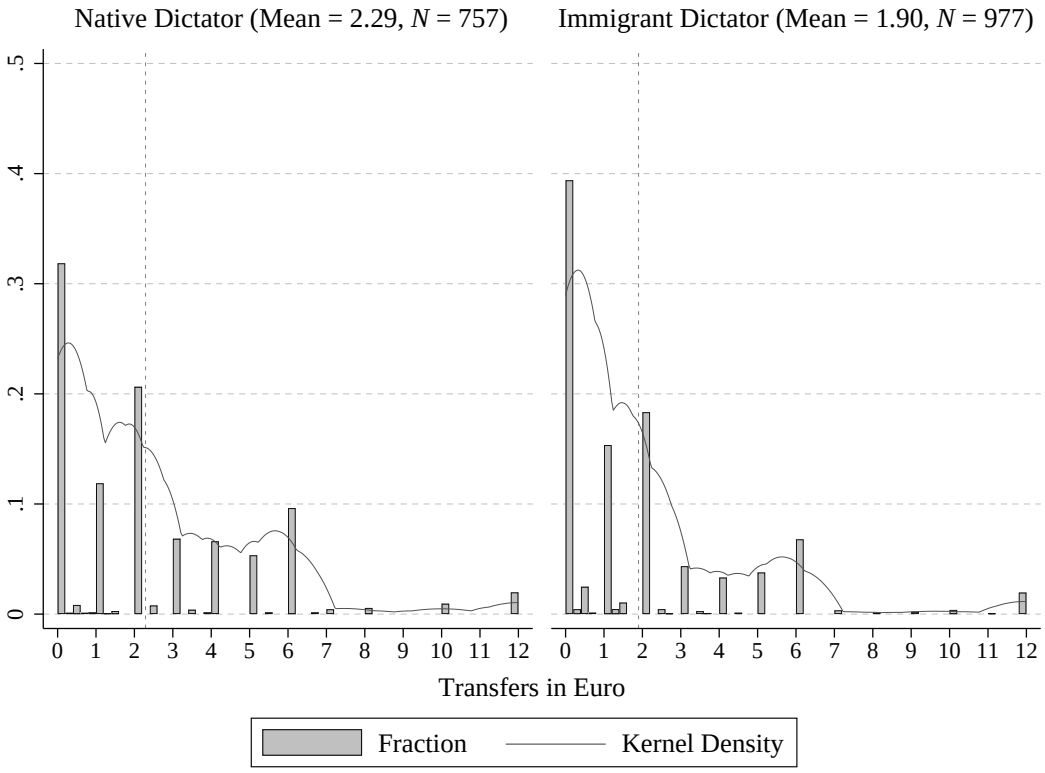

Figure 2: Relative distribution of transfers by native dictators (left) and immigrant dictators (right). Possible transfers range from €0 to €12. The dashed vertical lines represent the means for each subject pool, and the overlaid kernel density plot shows estimated density functions of fractions among the two groups (bandwidth: 0.55).

individual characteristics,[12] where we pool all transfers by native Germans in Model (I), immigrants in Model (II), and both groups jointly in models (III) and (IV) as dependent variables.

Among native dictators, we find that the age of decision makers is associated with transfers, as older dictators transfer higher amounts, which is visible from Model (I) in Table 2. The literature on this association is mixed. Some empirical studies show

[12]The variable "income" is an ordinal measure. Specifically, we used 5 income brackets based on the actual income data in Germany (Bundesbank, 2016) in case participants did not know their annual gross income precisely.

that younger individuals are more in favor of redistribution (Alesina and La Ferrara, 2005; Olivera, 2015), and some experimental studies show that older individuals act more generously (Engel, 2011; Pornpattananangkul et al., 2019). Moreover, we show that native

Table 2: Tobit regression with transfers by native Germans, immigrants, and both groups jointly as the dependent variables. Possible transfers range from €0 to €12. AGE represents the participants' age in years. The variable POL_LEFT-RIGHT represents a 7-point Likert scale on political preferences from left to right, with higher numbers indicating stronger preferences toward the right-wing political spectrum. MALE represents a dummy variable for gender taking a value of 1 for male participants and 0 for female participants. INCOME indicates the self-reported income of participants on a 5-point scale. INHABITANTS indicates the number of inhabitants of the participants' town of residence. EDUCATION and EDUCATION_PARENTS represent the education level of the participant and her parents, respectively, with higher values indicating higher education. 1^{st}_GEN_MIG is a binary dummy taking the value of 1 for transfers by first-generation immigrants and 0 for transfers by second-generation immigrants. DIC_NATIVE is a binary dummy taking the value of 1 if the dictator is a native German and 0 if the dictator is an immigrant. PERFORMANCE represents the number of correctly positioned sliders in the real-effort task.

	Native Dictator	Immigrant Dictator	Joint	
	Model (I)	Model (II)	Model (III)	Model (IV)
AGE	0.032*	−0.009		0.027*
	(0.012)	(0.018)		(0.011)
POL_LEFT-RIGHT	−0.531***	0.005		−0.423***
	(0.134)	(0.147)		(0.111)
MALE	0.280	0.755*		0.327
	(0.296)	(0.362)		(0.252)
INCOME	0.131	0.319*		0.143
	(0.116)	(0.156)		(0.101)
INHABITANTS	−0.156	0.064		−0.123
	(0.109)	(0.137)		(0.095)
EDUCATION	−0.272*	0.014		−0.215*
	(0.114)	(0.150)		(0.096)
EDUCATION_PARENTS	0.126	−0.172		0.056
	(0.104)	(0.097)		(0.082)
PERFORMANCE	−0.053*	−0.070*		−0.057*
	(0.027)	(0.029)		(0.023)
1^{st}_GEN_MIG		0.257		
		(0.368)		
DIC_NATIVE			0.589*	0.279
			(0.231)	(0.241)
Constant	3.508***	0.707	0.940***	2.903***
	(1.040)	(1.414)	(0.183)	(0.876)
Observations	757	977	1734	1734
Prob > Chi^2	0.000	0.096	0.011	0.000

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$. Dependent variable: TRANSFERS. Standard errors in parentheses.

dictators who identify themselves as right-wing transfer lower amounts in the dictator game compared to left-wing native dictators, as often reported in the literature (Dawes et al., 2012; Olivera, 2015; Cappelen et al., 2017). In addition, we find that native dictators with a higher level of education transfer lower amounts, which supports evidence that higher educated individuals are less supportive of redistribution (Alesina and La Ferrara, 2005). Finally, visible from the coefficient PERFORMANCE, we report that native Germans who performed better in the slider task transfer lower amounts to the allocated receivers. This is in line with literature on entitlement in dictator games (Cherry et al., 2002; Schurter and Wilson, 2009).

Model (II) in Table 2 shows that among immigrants, male participants act more generously than female participants. Similar to native dictators, better performing immigrants transfer smaller amounts. Beyond that, we find no relationships between individual characteristics and the amount of transfers in the dictator game among immigrants. Remarkably, we find no difference between first and second generation immigrants in terms of transfers, as the coefficient 1^{st}_GEN_MIG indicates. This finding also applies to all other specifications, which is why we exclude this covariate from the following analyses.

Furthermore, we test whether there are level differences between native Germans and immigrants in the overall propensity to transfer. As outlined with coefficient DIC_NATIVE in Model (III), we find that native dictators are associated with higher transfers in general, supporting the visual impression from Figure 2. However, when we add the set of the participants' characteristics in Model (IV), this relationship vanishes.[13] The difference in overall transfers between native Germans and immigrants seems to be better explained by the discussed differences in demographics between these two groups. In the next step we focus on the actual treatment results.[14]

[13] In Table A8 in the Appendix, we report the results of a Spearman correlation matrix for the set of control variables.

[14] Note that the treatment names and the focus of results in the main text differ partly from the pre-registered analysis plan. Compared to the pre-registered plan, we do not emphasize the differentiation between statistical and taste-based discrimination but focus on the pure treatment effects across the two dimensions of equality of opportunity and social groups instead. One reason is that we lost statistical power regarding the necessary, power-intensive interaction effects to distinguish between taste-based and statistical discrimination. The loss of statistical power is due to the described additional steps we took to increase data quality in the samples. Moreover, we focus on dictator decisions and disregard receivers' second-order beliefs. We also attenuate the focus on the impact of external beliefs, worldviews, and social ties on transfers and treatment effects in the paper to improve the reading flow. All analyses regarding these variables are presented in Section A1 in the Appendix.

3.2 Equal vs. Unequal Opportunities and Transfers

Result 1 *Native German and immigrant dictators transfer more to in-group receivers under unequal opportunities than under equal opportunities and show a preference to compensate the general presence of unequal opportunities.*

Support: We start by analyzing the results of the main treatment dimension with transfers exclusively to members of the same social group (in-group). This represents a more accurate approach to determine the impact of unequal opportunities on transfers, as it rules out possible confounding social group effects on the willingness to compensate unequal opportunities when aggregating in-group and out-group transfers. As it was

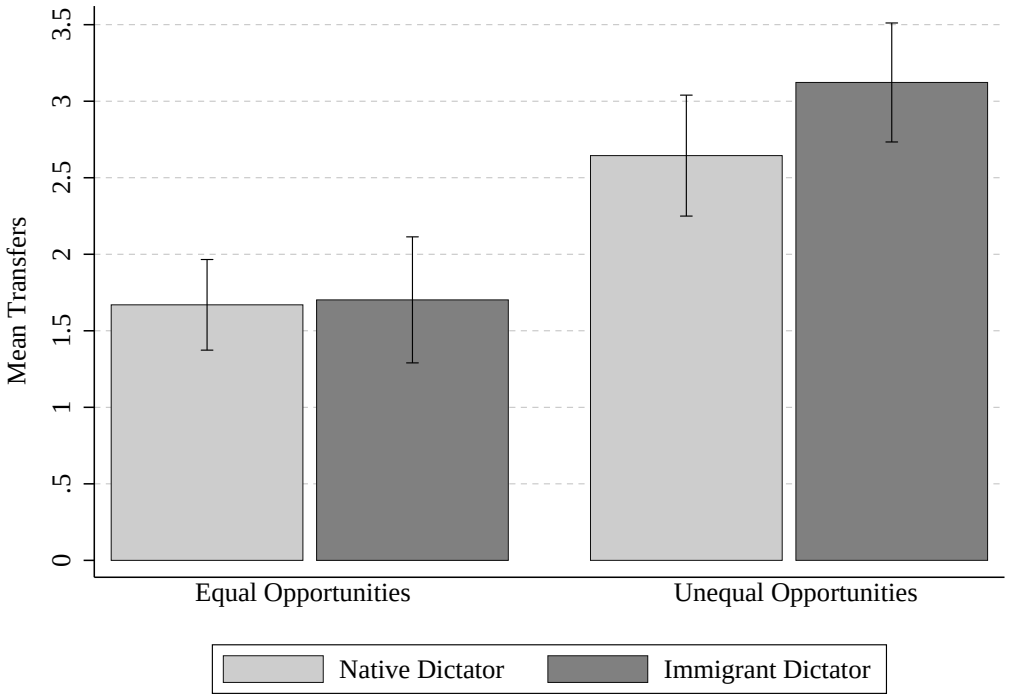

Figure 3: Mean in-group transfers between native and immigrant dictators under equal and unequal opportunities in the task. Possible transfers range from €0 to €12. The whiskers represent the 95% confidence intervals. Transfers under unequal opportunities contain transfers from dictators with and without bad luck themselves. $N = 889$ (494 immigrants, 395 native Germans).

common knowledge that all participants had a level playing field under equal opportunities, EQOP_IN measures the general willingness to share one's own payoff with a receiver given the fact that one can only be a receiver due to insufficient performance. From Figure 3 and the corresponding 95% confidence bounds, we can infer that transfers under equal opportunities (left bars) are statistically significantly different from zero. Therefore, on average, we show that native Germans and immigrants reveal preferences that are in line

with theoretical models, such as inequity aversion, a form of conditional altruism, which contradicts classical theoretical predictions of entirely monetarily self-interested behavior (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000).[15]

Moreover, we observe qualitatively similar transfer patterns between the two groups with respect to unequal opportunities as well (see the right bars in Figure 3). Native Germans and immigrants share more with matched receivers from their own group under unequal opportunities than under equal opportunities, and this effect seems to be more pronounced among immigrants compared to native Germans.

In order to investigate the effect of unequal opportunities on transfers, we run multivariate Tobit regression models with transfers to one's own social group in the dictator game as the dependent variable (see Table 3 for both subject pools separately and for a joint analysis). UNOP is a binary dummy taking a value of 1 for transfers under unequal opportunities and 0 for transfers under equal opportunities. DIC_NATIVE is a binary dummy taking a value of 1 if the dictator is a native German and 0 if the dictator is an immigrant. DIC_NATIVE#UNOP is an interaction variable between DIC_NATIVE and UNOP. For the main treatment analyses, we pool the dictator decisions of dictators without and with bad luck (i.e., the latter group got a deduction of six sliders) in the task under unequal opportunities. Supporting the visual impressions from Figure 3, we find that there is a strong and highly statistically significant effect of unequal opportunities on willingness to transfer among dictators from both subject pools (see coefficient UNOP in models (I) and (III) in Table 3). This effect becomes even slightly more pronounced when we add the set of control variables in models (II) and (IV). Specifically, the regression predicts that native and immigrant dictators transfer more (native Germans = €1.40; immigrants = €2.00) to in-group receivers if unequal initial opportunities were prevalent in the task. Furthermore, we report that the interaction coefficient DIC_NATIVE#UNOP in models (V) and (VI) is not statistically significant, indicating no group difference in the effect of unequal opportunities on transfers, visible in Figure 3. Given the graphical impression, we test if the statistical insignificance of this effect is due to a lack of statistical power or if the effect is practically equivalent to the null. Thus, we run an equivalence test (TOST regression).[16] We follow the approach by Juzek and Kizach (2019) and utilize the data in Table 1 to come up with a value of 0.64 for the parameter delta. This corresponds to a minimum worthwhile effect size of $\beta = \pm\ 0.64$. We cannot provide strong statistical

[15] It is reasonable to assume that inequality aversion drives at least part of the results. For instance, Kerschbamer and Müller (2020) report that around two-thirds of a representative German sample exhibit various degrees of inequality aversion. Furthermore, Blanco et al. (2011) find that inequality aversion can explain outcomes in dictator games on an aggregate level quite well. Nevertheless, we do not explicitly test theories that could potentially rationalize participants' behavior as this does not constitute the research objective of this paper.

[16] We use the user-written program tostregress in Stata (Dinno, 2017).

Table 3: Tobit regression on treatment effects with in-group transfers by native Germans and immigrants with and without bad luck as dependent variables. UNOP is a binary dummy taking the value of 1 for unequal opportunities and 0 for equal opportunities. DIC_NATIVE is a binary dummy taking the value of 1 if the dictator is a native German and 0 if the dictator is an immigrant. DIC_NATIVE#UNOP is an interaction variable between DIC_NATIVE and UNOP. Control variables are self-reported age, education, parents' education, gender, income, inhabitants in the town of residency, political preferences, and the number of correctly positioned sliders in the real-effort task. "Permute p" reports the p-values of the corresponding treatment dummy coefficient, obtained from permutation tests with 1,000 random draws.

	Native Dictator		Immigrant Dictator		Joint	
	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)
UNOP	1.172***	1.399***	1.730***	1.995***	1.615***	1.824***
	(0.379)	(0.388)	(0.612)	(0.591)	(0.537)	(0.529)
DIC_NATIVE					0.285	0.080
					(0.455)	(0.468)
DIC_NATIVE#UNOP					−0.429	−0.388
					(0.655)	(0.635)
Constant	0.803***	4.011***	0.165	−0.146	0.464	3.419***
	(0.277)	(1.316)	(0.442)	(2.614)	(0.372)	(1.189)
Control Variables	No	Yes	No	Yes	No	Yes
Permute p UNOP	0.002	0.001	0.012	0.004	0.000	0.000
Observations	395	395	494	494	889	889
Prob > Chi^2	0.002	0.003	0.005	0.005	0.000	0.000

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$. Dependent variable: INGROUP_TRANSFERS. Standard errors in parentheses.

support for the null regarding the coefficient DIC_NATIVE#UNOP (Model (V): $p(T > t_1) = 0.018$, $p(T > t_2) = 0.184$; Model (VI): $p(T > t_1) = 0.018$, $p(T > t_2) = 0.165$) and conclude that we are statistically indetermined and would need more data to detect difference or equivalence with the null (Tryon and Lewis, 2008). In addition, we apply randomization inference and run permutation tests with all specifications from Table 3.[17] We test the null that there are no treatment differences by simulating 1,000 draws of in-group transfer outcomes under EQOP and UNOP based on randomized treatment allocations ex-post and recording the 1,000 treatment effects. The less often the simulated treatment effects are larger than the actual treatment effects, the lower the permutation p values for the treatment dummy UNOP (see row "Permute p UNOP" in Table 3). The lower these p values, the higher the probability (1 - p) that the actual treatment allocation caused the observed effect. This probability is equal to or above 98.80% in all 6 specifications, pointing at a strong effect of the presence of unequal opportunities on dictator transfers.

[17] We use the user-written program ritest in Stata (Heß, 2017).

Table 4: Tobit regression on treatment effects with in-group transfers by native Germans and immigrants with and without bad luck as dependent variables. Possible transfers range from €0 to €12. UNOP is a binary dummy taking the value of 1 for unequal opportunities and 0 for equal opportunities. DIC_NATIVE is a binary dummy taking the value of 1 if the dictator is a native and 0 if the dictator is an immigrant. DIC_NATIVE#UNOP is an interaction variable between DIC_NATIVE and UNOP. Control variables are self-reported age, education, parents' education, gender, income, inhabitants in the town of residency, political preferences, and the number of correctly positioned sliders in the real-effort task. "Permute p" reports the p values of the corresponding coefficient, obtained from permutation tests with 1,000 random draws.

	Native Dictator		Immigrant Dictator		Joint	
	Bad Luck		Bad Luck		Bad Luck	
	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)
	No	Yes	No	Yes	No	Yes
UNOP	1.259***	1.359*	1.268*	2.112*	1.256*	2.566***
	(0.407)	(0.579)	(0.511)	(0.937)	(0.507)	(0.848)
DIC_NATIVE					0.055	0.066
					(0.452)	(0.441)
DIC_NATIVE#UNOP					0.050	−1.206
					(0.635)	(0.944)
Constant	2.776*	5.416***	3.376	−0.941	3.178**	4.377***
	(1.400)	(1.527)	(1.798)	(2.695)	(1.176)	(1.388)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Permute p UNOP	0.002	0.004	0.019	0.007	0.001	0.000
Observations	317	246	395	296	712	542
Prob > Chi^2	0.004	0.096	0.009	0.072	0.001	0.028

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$. Dependent variable: INGROUP_TRANSFERS. Standard errors in parentheses.

Additionally, we analyze whether the coefficient of UNOP is driven by dictators with and without bad luck (i.e., the latter group got a deduction of six solved sliders). This is important because pooling transfers from dictators with and without own bad luck and comparing them with transfers under EQOP can be susceptible to confounding effects. Own bad luck might influence preferences for redistribution in various undesirable ways: First, dictators may feel particularly entitled if, despite bad luck, they have reached the threshold for membership in the high-score group (Cherry et al., 2002; Schurter and Wilson, 2009). Second, one's own exposure to bad luck may increase the understanding of unequal opportunities by one' s own experience and make dictators more sensitive to potential bad luck of others.

Therefore, we run the regression on the influence of unequal opportunities on transfers separately for dictators without bad luck and for dictators with bad luck. Table 4 shows

that even though we lose statistical power when splitting the samples, the positive effects of unequal opportunities on transfers are statistically associated with native and immigrant dictators with and without bad luck. This is confirmed by the results of the randomization inference visible from the row "Permute 'p UNOP". The results shown in Models (I) and (III) in Table 4 imply a positive effect of inequality of opportunity on transfers, which is causally attributable to preferences to compensate receivers for the presence of circumstances beyond their control. This is the case because uncertainty about the opportunities of others is the only factor that differs for participants without bad luck under UNOP compared to decision makers under EQOP. Therefore, we find that the transfer behavior of native Germans and immigrants is consistent with the principle of compensation in the literature on equality of opportunity (Fleurbaey and Peragine, 2013; Ferreira and Peragine, 2015; Brunori, 2017). Furthermore, we test for differences in transfers under unequal opportunities between dictators with and without bad luck and apply Tobit regressions (unreported) with native German and immigrant dictators and the in-group transfers as dependent variables. The dummy BADLUCK, which equals 1 for dictators with bad luck and 0 for dictators without bad luck, and the set of controls serve as explanatory variables. We find that among native dictators the coefficient of BADLUCK (0.376) with $p = 0.57$ ($t = 0.57$, $N = 227$) is statistically insignificant. Therefore, there is no difference in transfers between native dictators with and without bad luck, so we find no evidence of either of the two effects of entitlement or sensitivity to inequality of opportunity discussed. Among immigrants, we report, based on a coefficient of BADLUCK (2.673) with $p < 0.005$ ($t = 3.58$, $N = 297$), that dictators who were unlucky in the task transfer higher amounts compared to dictators without bad luck. Among immigrants, the second effect discussed seems to predominate, since the experience of bad luck appears to make immigrant dictators more sensitive to the effects of inequality of opportunity.

Next, we analyze whether beliefs about the source of inequality are a potential mediator variable that can explain in-group transfers under unequal opportunities. In Table A4 in the Appendix, we report no statistically significant relationship between beliefs in bad luck (INTERNAL_BELIEF) and transfers to the in-group among native Germans, also after adding the set of control variables in Model (II). This result implies that the higher transfers of native Germans under unequal opportunities are not driven by specific beliefs about the source of inequality, but may reflect a more general norm to compensate for factors beyond one's control that are present under UNOP (i.e., the random occurrence of bad luck). Nevertheless, we find a statistically significant positive relationship between a belief in bad luck of receivers and transfers in the dictator game among immigrants when the set of control variables is included in Model (IV) in Table A4. Consequently, for immigrants, the specific beliefs about the source of low-score group membership of the recipient seem to mediate the higher transfers under unequal opportunities.

3.3 In-Group vs. Out-Group Receivers and Transfers

Result 2 *Under equal opportunities, native Germans and immigrants do not distinguish between in- and out-group receivers. Under unequal opportunities, however, transfers are higher to the in-group among immigrant dictators. In contrast to native dictators, immigrant dictators do not compensate unequal opportunities for the out-group.*

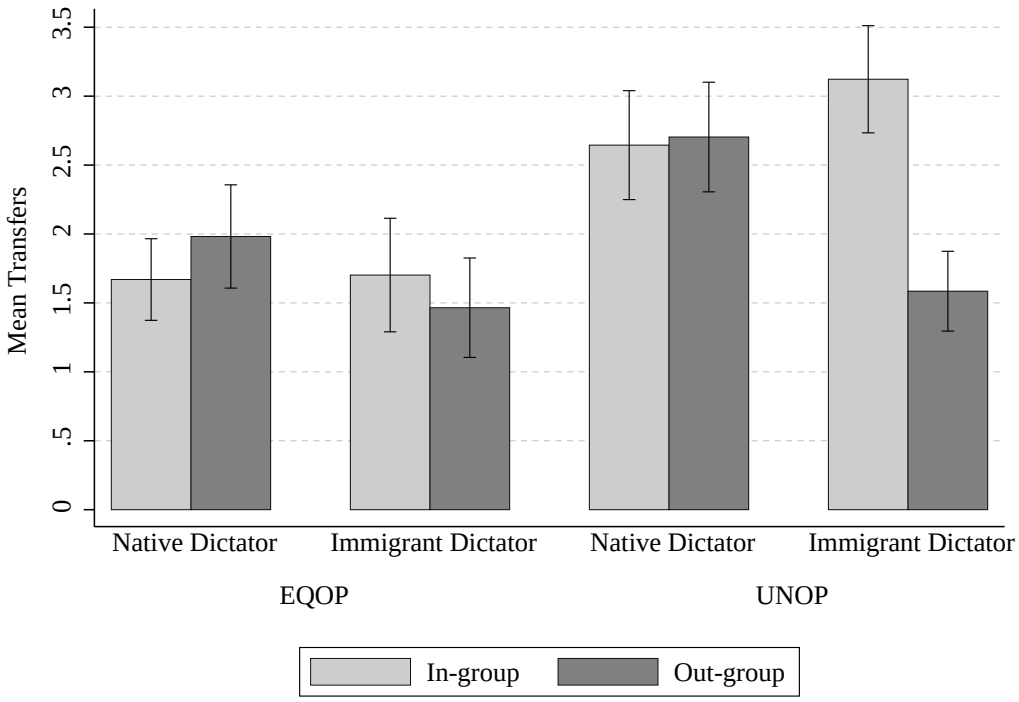

Figure 4: Mean in- and out-group transfers across opportunities in the task and origins of dictators. Possible transfers range from €0 to €12. The whiskers represent the 95% confidence intervals. $N = 1{,}734$ (977 immigrants, 757 native Germans).

Support: In Figure 4, we combine transfers to members of the in-group (light gray bars) with transfers to members of the out-group (dark gray bars). We find that native dictators transfer slightly more to members of the out-group than to members of the in-group under equal opportunities, while the opposite is true for immigrant dictators. When opportunities are unequal, transfers by native Germans do not appear to be dependent on the social group affiliation of the receivers. However, transfers from immigrants clearly depend on the social group membership of the transfer recipient, which suggests a statistically significant difference. Furthermore, for immigrants to Germany, the preference to compensate receivers for unequal opportunities reported in Section 3.2 seems to depend crucially on the social group affiliation of the assigned receivers.

We run multivariate Tobit regressions to test for social group effects on transfers

with transfers in the dictator game as the dependent variable among both subject pools separately and jointly in a pooled specification and show the results in Table 5. Analogous to Figure 4, we split the specifications across EQOP and UNOP. OUTGROUP is a binary dummy which equals 1 for transfers to out-group members and 0 for transfers to in-group members. DIC_NATIVE is a binary dummy taking the value of 1 if the dictator is a native and 0 if the dictator is an immigrant. DIC_NAT#OUT is an interaction term between DIC_NATIVE and OUTGROUP.

Table 5: Tobit regression on social group effects with transfers by native Germans, immigrants and both groups jointly as the dependent variables. Possible transfers range from €0 to €12. OUTGROUP is a binary dummy which equals 1 for transfers to out-group members and 0 for transfers to in-group members. DIC_NATIVE is a binary dummy taking the value of 1 if the dictator is a native and 0 if the dictator is an immigrant. DIC_NAT#OUT is an interaction variable between DIC_NATIVE and OUTGROUP. Control variables are self-reported age, education, parents' education, gender, income, inhabitants of the town of residency, political preferences, and the number of correctly positioned sliders in the real-effort task. "Permute p" reports the p values of the corresponding coefficient, obtained from permutation tests with 1,000 random draws.

	Native Dictator		Immigrant Dictator		Joint	
	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)
	EQOP	UNOP	EQOP	UNOP	EQOP	UNOP
OUTGROUP	0.272	0.077	−0.225	−1.344*	−0.236	−1.146*
	(0.361)	(0.380)	(0.458)	(0.536)	(0.467)	(0.503)
DIC_NATIVE					−0.191	−0.294
					(0.432)	(0.503)
DIC_NAT#OUT					0.542	1.223
					(0.595)	(0.635)
Constant	3.371**	4.227***	0.259	1.617	2.988**	4.210***
	(1.292)	(1.410)	(1.592)	(1.917)	(1.092)	(1.168)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Permute p OUTGROUP	0.465	0.853	0.660	0.008	0.458	0.002
Observations	318	439	391	586	709	1025
Prob > Chi^2	0.008	0.000	0.141	0.113	0.012	0.000

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$. Dependent variable: TRANSFERS. Standard errors in parentheses.

We find that native German dictators do not differentiate between in-group and out-group receivers under equal and unequal opportunities (see models (I) and (II) in Table 5). However, immigrant dictators transfer statistically significantly higher amounts to members of their in-group compared to members of their out-group under unequal opportunities (see Model (IV) in Table 5). We also report that immigrant dictators under equal opportunities do not exhibit such behavior, which is evident from Model (III). Again, we additionally conduct permutation tests with all specifications from Table 5 and 1,000

random draws. These results in row "Permute p OUTGROUP" support the regression analyses and even indicate a statistically significant negative out-group effect at the 1% significance level among immigrants under unequal opportunities.

Consequently, we cannot support the results on an influence of social identity on redistributive preferences (Luttmer, 2001; Klor and Shayo, 2010; Holm and Geys, 2018; Magni, 2020) for native Germans. A tentative explanation for this result could be that the native Germans in the sample do not strongly perceive individuals with an immigration background as members of an out-group. Another speculative explanation could be that there exist other unobserved preferences for norm compliance, such as an inclination to signal to the experimenter a non-discriminatory behavior toward the social group of immigrants in Germany, which could counteract the direction of social group effects found in part of the literature. More generally, in a meta-analysis on discrimination in experiments, Lane (2016) finds that discrimination is stronger in studies in which participants are separated into socially or geographically distinct groups or in which group identities are artificially induced than in studies in which samples are split alongside actual nationalities or ethnicities.

The results for immigrants as a minority could reflect their solidarity in the experiment, based on their willingness to compensate for the perceived unequal opportunities of their group in society. (Vollhardt et al., 2016; Cortland et al., 2017; Burson and Godfrey, 2020). Furthermore, the result may also be explained by the immigrants' beliefs about the source of inequality in the experiment. Figure A1 in the Appendix shows the proportion of beliefs in bad luck for native and immigrant dictators, depending on whether the receivers are from the in-group or the out-group. According to the visual impression, native Germans are slightly less likely to believe in self-inflicted low-score group membership among immigrant recipients than among native German recipients. This would be consistent with experimental evidence showing that native German student participants are more benevolent in responsibility attribution toward refugees compared to native Germans (Grimm and Klimm, 2019). According to Figure A1 in the Appendix, immigrants seem to believe disproportionately in bad luck of in-group members compared to bad luck of out-group members. To statistically test for differences, we run logit regressions (unreported) with native German and immigrant dictators and the dummy BADLUCK as the dependent variable, along with the dummy OUTGROUP and the set of controls as independent variables. We find that among immigrants the coefficient of OUTGROUP (-0.953) is statistically significant with $p < 0.005$ (t = -3.90, $N = 586$). For native Germans, we do not find a statistically significant coefficient of OUTGROUP (0.363) with $p = 0.08$ (t = 1.74, $N = 439$). Combined with the finding of higher in-group transfers among immigrants conditional on a belief in bad luck (see Table A4), this could explain, at least in part, the difference in in-group and out-group transfers of immigrants under unequal opportunities. Additionally, another partial explanation for the distinction between in-group and out-group

members among immigrants, which we do not find among native Germans, might be that social group membership plays a more important role in the self-definition of members of minorities (Verkuyten and Zaremba, 2005; Verkuyten, 2008; Koh et al., 2009). This would indicate that immigrants have an emotional connection to other immigrants, while for native Germans such group affiliations play a more minor role and they view all (natives and immigrants) more equally. Overall, when we combine the data in models (V) and (VI), we find no statistically significant difference between native Germans and immigrants in the propensity to adopt different behavior toward in-group and out-group members (DIC_NAT#OUT) under equal and unequal opportunities, although the effect under unequal opportunities (Model (VI)) approaches conventional levels of significance ($p = 0.054$).

Table 6: Tobit regression on treatment dummies with transfers by native Germans and immigrants and both groups jointly as the dependent variables. Possible transfers range from €0 to €12. EQOP_OUT indicates the out-group transfers under equal opportunities, and EQOP_IN, the in-group transfers under equal opportunities, serves as the reference category in the models. UNOP_IN and UNOP_OUT represent the in- and out-group transfers under unequal opportunities, respectively. Control variables are self-reported age, education, parents' education, gender, income, inhabitants of the town of residency, political preferences, and the number of correctly positioned sliders in the real-effort task. The post-estimation Wald tests show p values.

	Native Dictator		Immigrant Dictator		Joint	
	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)
EQOP_OUT	0.532	0.388	−0.235	−0.108	0.396	0.304
	(0.422)	(0.403)	(0.524)	(0.510)	(0.364)	(0.348)
UNOP_IN	1.187***	1.330***	1.514**	1.670***	1.241***	1.413***
	(0.379)	(0.380)	(0.553)	(0.548)	(0.330)	(0.330)
UNOP_OUT	1.270***	1.338***	0.199	0.300	1.086***	1.215***
	(0.387)	(0.380)	(0.463)	(0.468)	(0.334)	(0.328)
Constant	0.727**	3.052***	0.434	0.283	0.676**	2.798***
	(0.276)	(0.991)	(0.381)	(1.319)	(0.241)	(0.830)
Control Variables	No	Yes	No	Yes	No	Yes
Observations	757	757	977	977	1734	1734
Prob > Chi^2	0.002	0.000	0.010	0.008	0.000	0.000
Post Estimation Wald-Tests:						
UNOP_IN vs. UNOP_OUT	0.828	0.983	0.008	0.005	0.637	0.529
EQOP_OUT vs. UNOP_OUT	0.084	0.019	0.347	0.372	0.059	0.009

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$. Dependent variable: TRANSFERS. Standard errors in parentheses.

Finally, as a robustness check for the results across both treatment dimensions, we conduct Tobit regressions on treatment dummies with transfers by native Germans and immigrants and both groups jointly as the dependent variables in Table 6. EQOP_OUT indicates the out-group transfers under equal opportunities, and EQOP_IN, representing the in-group transfers under equal opportunities, serves as the reference category in the

models. UNOP_IN and UNOP_OUT represent the in- and out-group transfers under unequal opportunities, respectively. As Result 1 shows and as can be observed from the coefficient UNOP_IN, we find statistically significantly higher dictator transfers to the in-group under unequal opportunities than under equal opportunities in both pools (see models (V) and (VI) in Table 6). Furthermore, the results in Table 6 regarding the effects of group membership on transfers confirm that native and immigrant dictators do not transfer statistically significantly different amounts to in-group and out-group recipients under equal opportunities (see coefficient EQOP_OUT). This also applies to native dictators under unequal opportunities (see the post-estimation Wald tests UNOP_IN vs. UNOP_OUT in models (I) and (II) in Table 6). However, supporting the results in Table 5, immigrant dictators exhibit a highly statistically significant preference for in-group receivers under unequal opportunities (see the post-estimation Wald tests UNOP_IN vs. UNOP_OUT in models (III) and (IV) in Table 6). Furthermore, we report an important addition that confirms the visual impression in Figure 4. The post-estimation Wald tests in Model (II) and Model (IV) show that only native dictators compensate unequal opportunities for the out-group (EQOP_OUT vs. UNOP_OUT).

4 Discussion and Contribution to Previous Literature

The results reported in this paper contribute to several strands of literature. First, we add to the general literature on generosity (Engel, 2011) and other-regarding preferences (Frohlich et al., 2004), such as attitudes toward inequality (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000) by implementing dictator decisions with native Germans and immigrants to Germany. Additionally, we introduce dictator decisions where participants' earned payoffs in a real-effort task are at stake. In doing so, we abstract less from reality than by utilizing other approaches, such as games with windfall endowments or spectator decisions. Cherry et al. (2002) and Schurter and Wilson (2009) show that dictators behave more in accordance with game-theoretic predictions, thus, act more self-centered, when the stakes in the dictator game are earned rather than simply given by the experimenter.

By varying individual opportunities in the real-effort task, we also contribute to the strand on attitudes toward unequal opportunities. The underlying concept of equality of opportunity is commonly based on two principles, namely, the principle of compensation and the principle of reward. The former states that inequality of outcomes (e.g., income or wealth) that arises from circumstances beyond one's control is due to inequality of opportunities (e.g., gender, family background, or location of birth) and should be removed. The latter principle states that this is not the case for inequality of outcomes that arises due to differences in choices and effort (Fleurbaey and Peragine, 2013; Ferreira and Peragine, 2015; Brunori, 2017). Usually, differences in economic outcomes, thus, can been seen as the

result of an individual's choices and effort, but also to the varying extent of differences in opportunities (Brunori et al., 2013). Some scholars argue that the nature of inequality can be understood more adequately if we appreciate the extent to which inequality is caused by factors beyond one's control (Dworkin, 1981a,b; Roemer, 2002; Corak, 2016). Piketty (1995) provides a rational-learning theory that explains the influence of beliefs in individual effort versus predetermined factors not in one's control as the primary determinant of success on attitudes toward inequality. Similarly, Alesina and Angeletos (2005) develop a model that results in multiple equilibria regarding redistribution, based on different beliefs on the sources of inequality. Built on Fehr and Schmidt (1999), who propose a model of outcome fairness, Trautmann (2009) introduces a framework for process fairness and shows that the model explains observed empirical patterns in random ultimatum games. These contributions suggest that differences in the generating process (i.e., the source) of inequality can lead to differences in the normative acceptance of inequality. Existing empirical and experimental literature confirms that individuals categorize not all inequality as undesired. Nevertheless, when individuals know (or believe) that inequality exists due to circumstances beyond one's control (in contrast to a lack of individual effort), they tend to support redistribution in surveys more often (Fong, 2001; Alesina and La Ferrara, 2005; Jencks and Tach, 2006; Alesina et al., 2011) and act more generously in experiments (Krawczyk, 2010; Caballero, 2014; Durante et al., 2014; Mollerstrom et al., 2015; Alan and Ertac, 2017; Alesina et al., 2018; Bartling et al., 2018; Rey-Biel et al., 2018; Akbaş et al., 2019).

Moreover, Cappelen et al. (2013) provide evidence that choices involving risk play a role in fairness preferences as well. The authors show that inequalities between lucky and unlucky risk takers are generally eliminated, while inequalities between risk takers and risk averse participants are not eliminated, which is consistent with the principles of compensation and reward. In related experimental work, Mollerstrom et al. (2015) show that impartial spectators on average eliminate inequality due to uncontrollable bad luck. Nevertheless, the authors also show that seemingly unrelated choices of receivers regarding another controllable risk strongly influence the degree of compensation of uncontrollable bad luck. Consequently, the causes of inequality, but also the choices of beneficiaries, whether or not they are directly related, seem to be relevant for redistributive preferences.[18]

Based on a large sample of the general population, we contribute to this literature by increasing the external validity of the discussed findings. In particular, we show that unequal opportunities ceteris paribus causally increase the willingness to redistribute

[18] In addition to fairness considerations, Aiyar and Ebeke (2019) argue that unequal opportunities could potentially exert an influence on economic growth, because the growth-inhibiting effects of inequality might be mediated by actually present inequality of opportunities, thus possibly providing an explanation for the partially mixed results regarding the influence of inequality on growth (Perotti, 1996; Patridge, 1997; Figini, 1999; Berg et al., 2018).

among native Germans and immigrants to Germany. We report that this effect is based solely on the general existence of circumstances beyond one's control, without precise information about the specific reason for inequality (bad luck vs. inadequate performance).

Finally, we contribute to the literature on the effects of social identity on behavior toward others. The existing literature suggests that individuals base their feelings of who they are on the groups they belong to or identify with (Sniderman et al., 2004; Markaki and Longhi, 2013). Accompanied by a striving for social dominance (Pratto et al., 2006), such group categorizations induce perceptual effects that promote the adaption of beliefs in negative out-group traits (Schaller, 1991; Glynn, 1997), which can lead to a differential treatment of in- and out-group members (Fiske et al., 2002; Charness et al., 2007; Cuddy et al., 2007; Chen and Li, 2009; Abbink and Harris, 2019; Cettolin and Suetens, 2019). Heidhues et al. (2019) provide a theoretical explanation for such beliefs by showing that overconfidence, which is widespread empirically (Svenson, 1981), leads to a tendency to explain one's bad outcomes by discriminatory behavior against oneself or one's in-group rather than by a lack of one's ability compared to others. In addition, theoretical, experimental, and empirical work on social identification suggests that social identity exerts an influence on preferences for redistribution (Luttmer, 2001; Shayo, 2009; Klor and Shayo, 2010; Lindqvist and Östling, 2013; Holm and Geys, 2018; Magni, 2020). We add to this literature by varying the actual social group membership of receivers in decisions on redistribution. We show that native Germans and immigrants to Germany partially exhibit heterogeneous attitudes toward out-groups when it comes to redistributing earned money. Additionally, incorporating natural group identities instead of inducing trivial identities such as "blue group and red group" allows us to arrive at a more realistic picture of the impact of social group effects on redistribution in society.

Thus, what distinguishes this study crucially from most of the cited literature is the fact that previous studies mainly involved student experiments and artificially induced social groups in the laboratory. We contribute by showing that the results of the majority of empirical studies on the influence of unequal opportunities on redistribution also apply to native Germans and immigrants to Germany. In addition, we provide evidence that, conditional on whether equal or unequal opportunities prevail, certain subgroups of the German population, such as immigrants, are influenced in their redistributive preferences by the recipient's affiliation to a social group, while this is not the case for others (native Germans).

5 Conclusion

In this paper we presented the results of a large-scale online experiment with a real effort task and a subsequent dictator game. The goal was to examine the influence of inequality of opportunity and social identity of receivers on preferences for redistribution of native Germans and immigrants to Germany.

First, with respect to the influence of unequal opportunities, we found that dictators from both groups redistributed significantly more to members of their own group in the presence of unequal opportunities than under equal opportunities. Second, with respect to the influence of social group affiliations, we showed that for both groups - native Germans and immigrants - dictators' transfers between recipients of the in-group and the out-group were not distinguishable under equal opportunities. This also applied to transfers from native dictators under unequal opportunities. The main novelty we found, however, was that immigrant dictators under unequal opportunities transferred statistically significantly more to in-group receivers than to out-group receivers. Furthermore, immigrant dictators did not compensate the unequal opportunities for out-group receivers.

Taken together, the results provide new insights into preferences for redistribution. We reported that natives and immigrants to Germany share common characteristics, such as the preference to compensate the existence of unequal opportunities at least for their own social group. As the key new findings, however, we reported that the transfer decisions of immigrants to Germany, but not of native Germans, differ among unequal opportunities in terms of the receivers' social group affiliation, and that unequal opportunities of native Germans are not compensated by immigrants to Germany. These findings suggest that policymakers should not ignore the role of equality of opportunity in redistributive preferences, which also depends on the social group affiliation of transfer beneficiaries. Although we did not apply specific statistical tests to distinguish between taste based discrimination (Becker, 1971; Berson, 2016) and statistical discrimination (Phelps, 1972), the preference of immigrants to refuse to compensate the unequal opportunities of out-group members only, accompanied by their disproportionate belief in poor performance of the out-group members as a reason for receivers' low-score group membership, points toward the direction of statistical discrimination in the immigrant sample. This intuition is strengthened by the finding that there were no differences in transfers to recipients from the in- and the out-group among immigrant dictators under equal opportunities. Future research should focus on this important distinction. Moreover, further research could also target the separation between in-group favouritism and out-group discrimination among different social groups in the general German population.

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Appendix

A1 Other Exploratory Results

In this section of the Appendix we investigate whether political preferences, determinants of economic success in life, out-group stereotypes and social ties can explain transfers in the dictator game. After the experiment, we administered a questionnaire on attitudes toward economic success in life and social groups, as well as a series of demographic data including a question on political preferences. This questionnaire forms the basis for the exploratory results in this section of the Appendix. Specifically, we asked both groups about their perception of native Germans in terms of competence (COMPETENCE_NAT), self-confidence (CONFIDENCE_NAT), warmth (WARMTH_NAT), honesty (HONESTY_NAT), success (SUCCESS_NAT), and education (EDUCATION_NAT), and about their perception of immigrants in terms of their competence (COMPETENCE_IMM), their self-confidence (CONFIDENCE_IMM), their warmth (WARMTH_IMM), their honesty (HONESTY_IMM), their success (SUCCESS_IMM) and their education (EDUCATION_IMM) on 7-point Likert scales (Fiske et al., 2002).

On the basis of the international social survey program (Gimpelson and Monusova, 2014) we also gathered perceptions of upward social mobility by asking which circumstances or characteristics the participants considered relevant determinants of economic success in life. The variables WEALTHY_FAMILY, EDUCATED_PARENTS, EDUCATED, AMBITIOUS, HARD_WORK, RIGHT_PEOPLE characterize the perceived importance of being born into a wealthy family, having educated parents, being educated, being ambitious, working hard, and knowing the right people to have economic success in life on 5-point Likert scales. In addition, we asked questions about the social ties regarding the respective out-group in the public (TIES_NAT_PUB; TIES_IMM_PUB), professional (TIES_NAT_PROF; TIES_IMM_PROF) and private (TIES_NAT_PRIV; TIES_NAT_PRIV) domains on 5-point Likert scales (Eurobarometer, 2018). The specific wording of these questions can be found in the instructions in this Appendix.

First, we analyze whether political preferences have an impact on transfers. In Table A3 we show the results of the Tobit regressions we conduct on political preferences with in- and out-group transfers of native Germans and immigrants across equal and unequal opportunities as dependent variables. We exclude political preferences from the set of control variables in the regressions and report point estimates instead. Specifically, the dummy variable POL_LEFT represents dictators who describe themselves as politically left (Likert scale < 4), while the dummy variable POL_RIGHT represents dictators who describe themselves as politically right (Likert scale > 4) on a 7-point Likert scale from left to right. The reference category is contained in the constant (Likert scale $= 4$). As

shown in Table A3 and the post-estimation Wald test in Model (II), we find that politically left-wing native dictators transfer more to out-group members than politically right-wing native dictators under the aspect of equal opportunities. Under unequal opportunities we find that native dictators who identify themselves as leftist transfer more to members of the out-group than those who identify themselves in the political center, which serves as a reference category. From the post-estimation Wald test reported in Model (IV), we can deduce that left-wing dictators also transfer statistically significantly more to out-group members than those who identify themselves as right-wing. This result could indicate a solidarity with immigrants to Germany by leftist native dictators. For immigrant dictators under unequal opportunities, the regression predicts that politically right-wing decision-makers transfer significantly larger amounts (€3.41) to members of the in-group compared to immigrant dictators who identify themselves as politically centered. The Wald test according to the estimation in Model (VII) shows that politically right-wing immigrant dictators also transfer statistically significantly more to in-group recipients compared to politically left-wing immigrant dictators. This indicates that the finding in Figure 4 of the difference between in-group and out-group transfers of immigrants under unequal opportunities seems to be strongly driven by politically right-wing oriented immigrant dictators. These results are consistent with the literature, which shows that political preferences are linked to attitudes toward the welfare state and increasingly toward social groups (De Vries et al., 2013; Otto and Steinhardt, 2014; Halla et al., 2017; Edo et al., 2019).

Second, we analyze whether attitudes toward upward social mobility, which have been empirically demonstrated to co-determine attitudes toward inequality (Gimpelson and Monusova, 2014), play a role in shaping in-group transfers among equal and unequal opportunities among native Germans and immigrants to Germany. Table A5 in the Appendix contains the results of a Tobit regression with transfers as a dependent variable and the six instruments of upward social mobility as explanatory variables. We find that world views on determinants of economic success have no association with transfers. Among immigrants, those who believe that coming from a wealthy family is important for success in life transfer statistically significantly lower amounts under unequal opportunities. Immigrants who believe that hard work is a relevant determinant of success share statistically significantly lower amounts under equal opportunities, which is partly contradictory to the positive sign of the coefficient AMBITIOUS. We test for multicollinearity by calculating Variance Inflation Factors (VIFs), which indicate that multicollinearity is not a concern (the VIFs of all independent variables in all four specifications are below 2).

In further exploratory analyses, we investigate the influence of real social contact with members of the out-group on the willingness to transfer to recipients of the out-group in the dictator game. Table A6 in the Appendix shows that immigrant dictators transfer statistically significantly higher amounts to native Germans under unequal opportunities

when they self-report having more contact with natives in the professional domain. Native Germans, on the other hand, transfer highly statistically significantly lower amounts to out-group members under unequal opportunities when they report having more social contacts with immigrants in public space. Furthermore, we investigate the relationship between self-reported out-group perceptions along the dimensions of competence and warmth and out-group transfers in the dictator game. In Table A7 in the Appendix we report that native dictators who perceive immigrants as more self-confident transfer significantly lower amounts of money to immigrants in the dictator game under unequal opportunities. Among immigrants we find a rather contradictory effect. Immigrant dictators, who perceive natives as warmer, transfer statistically significantly lower amounts to natives under unequal opportunities. Under equal opportunities, immigrant dictators share more with native receivers if they perceive native Germans as more successful. We calculate the variance inflation factors (VIF) and multicollinearity does not seem to be a major problem (the VIF's of all independent variables in all four specifications are below 4.7).

A2 Additional Figures and Tables

Table A1: Randomization checks of demographic variables across treatments. AGE represents the participants age in years. The variable POL_LEFT-RIGHT represents a 7-point Likert scale on political preferences from left to right. MALE represents a dummy variable for gender taking a value of 1 for male participants and 0 for female participants. INCOME indicates the self-reported income of participants on a 5-point scale. INHABITANTS indicates the number of inhabitants of the participants' town of residence. EDUCATION and EDUCATION_PARENTS represent the education level of the participant and her parents, respectively. STATE_OF_RESIDENCY is a categorical variable indicating the self-reported state of residence of participants in Germany. PROFESSION is a categorical variable indicating self-reported profession of participants. PERFORMANCE represents the number of solved sliders in the task.

Group	Variable	Test	Test-Statistic	N
Native	INCOME	Kruskal-Wallis Test	$chi^2 = 2.76$	757
Immigrant	INCOME	Kruskal-Wallis Test	$chi^2 = 1.73$	977
Native	MALE	Pearsons χ^2 Test	$chi^2 = 0.24$	757
Immigrant	MALE	Pearsons χ^2 Test	$chi^2 = 0.95$	977
Native	POL_LEFT-RIGHT	Kruskal-Wallis Test	$chi^2 = 8.15$*	757
Immigrant	POL_LEFT-RIGHT	Kruskal-Wallis Test	$chi^2 = 1.00$	977
Native	EDUCATION	Kruskal-Wallis Test	$chi^2 = 7.56$	757
Immigrant	EDUCATION	Kruskal-Wallis Test	$chi^2 = 0.93$	977
Native	EDUCATION_PARENTS	Kruskal-Wallis Test	$chi^2 = 7.74$	757
Immigrant	EDUCATION_PARENTS	Kruskal-Wallis Test	$chi^2 = 1.65$	977
Native	STATE_OF_RESIDENCY	Pearsons χ^2 Test	$chi^2 = 51.57$	757
Immigrant	STATE_OF_RESIDENCY	Pearsons χ^2 Test	$chi^2 = 41.14$	977
Native	INHABITANTS	Kruskal-Wallis Test	$chi^2 = 5.24$	757
Immigrant	INHABITANTS	Kruskal-Wallis Test	$chi^2 = 2.30$	977
Native	PROFESSION	Pearsons χ^2 Test	$chi^2 = 14.39$	757
Immigrant	PROFESSION	Pearsons χ^2 Test	$chi^2 = 22.11$	977
Native	AGE	Kruskal-Wallis Test	$chi^2 = 4.94$	757
Immigrant	AGE	Kruskal-Wallis Test	$chi^2 = 0.45$	977
Native	PERFORMANCE	Kruskal-Wallis Test	$chi^2 = 32.89$***	757
Immigrant	PERFORMANCE	Kruskal-Wallis Test	$chi^2 = 14.87$***	977

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$.

Table A2: Tests for differences in demographic variables between native Germans and immigrants. AGE represents the participants age in years. The variable POL_LEFT-RIGHT represents a 7-point Likert scale on political preferences from left to right. MALE represents a dummy variable for gender taking a value of 1 for male participants and 0 for female participants. INCOME indicates the self-reported income of participants on a 5-point scale. INHABITANTS indicates the number of inhabitants of the participants' town of residence. EDUCATION and EDUCATION_PARENTS represent the education level of the participant and her parents, respectively. STATE_OF_RESIDENCY is a categorical variable indicating the self-reported state of residence of participants in Germany. PROFESSION is a categorical variable indicating self-reported profession of participants.

Variable	Test	Test-Statistic	N
INCOME	Kruskal-Wallis Test	$chi^2 = 82.92^{***}$	1734
MALE	Pearsons χ^2 Test	$chi^2 = 30.36^{***}$	1734
POL_LEFT-RIGHT	Kruskal-Wallis Test	$chi^2 = 7.67^{**}$	1734
EDUCATION	Kruskal-Wallis Test	$chi^2 = 34.26^{***}$	1734
EDUCATION_PARENTS	Kruskal-Wallis Test	$chi^2 = 8.20^{***}$	1734
STATE_OF_RESIDENCY	Pearsons χ^2 Test	$chi^2 = 125.73^{***}$	1734
INHABITANTS	Kruskal-Wallis Test	$chi^2 = 50.71^{***}$	1734
PROFESSION	Pearsons χ^2 Test	$chi^2 = 293.20^{***}$	1734
AGE	Kruskal-Wallis Test	$chi^2 = 427.59^{***}$	1734
PERFORMANCE	Kruskal-Wallis Test	$chi^2 = 2.25$	1734

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.005$.

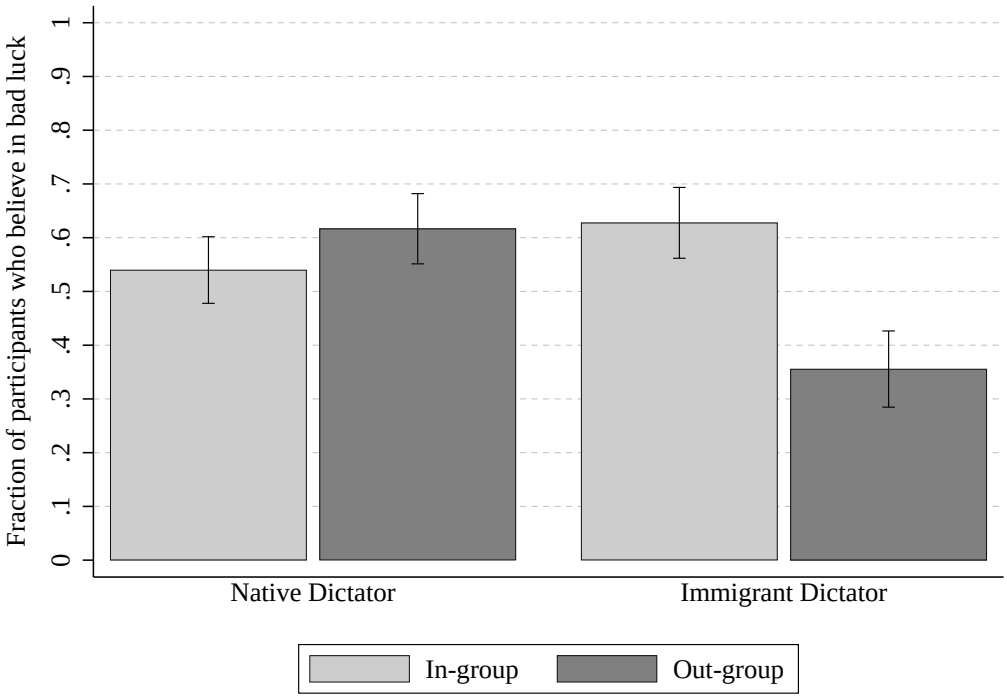


Figure A1: Fraction of participants under unequal opportunities who believe that the decisive reason why their allocated receiver did not receive any payoff for the task was bad luck. The whiskers represent the 95% confidence intervals.

Table A3: Tobit regression on the effects of political preferences on transfers across equal and unequal opportunities with in- and out-group transfers by native Germans and immigrants as the dependent variables. Possible transfers range from €0 to €12. The dummy POL_LEFT represents individuals who describe themselves as left-wing (Likert scale < 4), whereas the dummy POL_RIGHT represents individuals who describe themselves as right-wing (Likert scale > 4) on a 7-point Likert scale from left to right. Control variables are self-reported age, education, parents' education, gender, income, inhabitants in the town of residency, and the number of solved sliders in the real-effort task. The post-estimation Wald test shows p values.

	Native Dictator				Immigrant Dictator			
	Equal Opportunities		Unequal Opportunities		Equal Opportunities		Unequal Opportunities	
	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)
	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group
POL_LEFT	0.443	1.146	0.842	1.330*	0.069	0.023	0.211	0.328
	(0.584)	(0.601)	(0.594)	(0.594)	(0.753)	(0.690)	(0.710)	(0.537)
POL_RIGHT	−0.884	−0.873	0.066	−0.952	−0.120	0.407	3.405***	0.259
	(0.599)	(0.801)	(0.866)	(0.775)	(0.808)	(0.624)	(0.962)	(0.680)
Constant	2.731	0.667	3.988*	0.662	0.670	0.721	−1.895	−1.832
	(1.499)	(1.656)	(1.760)	(2.054)	(2.369)	(1.813)	(1.797)	(1.687)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	168	150	227	212	197	194	297	289
Prob > Chi^2	0.143	0.023	0.067	0.007	0.326	0.505	0.000	0.005
Post Estimation Wald-Test:								
POL_LEFT vs. POL_RIGHT	0.047	0.018	0.371	0.004	0.820	0.644	0.002	0.927

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$. Dependent variable: TRANSFERS. Standard errors in parentheses.

Table A4: Tobit regression with in- group transfers by native Germans and immigrants as the dependent variables. Possible transfers range from €0 to €12. INTERNAL_BELIEF is a dummy variable that takes the value of 1 if participants believe in bad luck of the allocated receivers and 0 if they believe in a lack of performance. Control variables are self-reported age, education, parent's education, gender, income, inhabitants of the town of residency, political preferences, and the number of solved sliders in the real-effort task.

	Native Dictator		Immigrant Dictator	
	Model (I)	Model (II)	Model (III)	Model (IV)
INTERNAL_BELIEF	0.872	1.083	1.398	1.511*
	(0.565)	(0.989)	(0.770)	(0.730)
Constant	1.479***	5.156*	1.309	−2.087
	(0.421)	(2.042)	(0.674)	(1.952)
Control Variables	No	Yes	No	Yes
Observations	227	227	297	297
Prob > Chi^2	0.123	0.043	0.070	0.000

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$. Dependent variable: INGROUP_TRANSFERS. Standard errors in parentheses

Table A5: Tobit regression on the effects of attitudes toward social mobility instruments with in-group transfers under equal and under unequal opportunities by native Germans and immigrants as the dependent variables. Possible transfers range from €0 to €12. The perceived importance of the six instruments was elicited with 7-point Likert-scales, whereby higher values indicate a higher perceived importance of the instrument for success in life. WEALTHY_FAMILY, EDUCATED_PARENTS, EDUCATED, AMBITIOUS, HARD_WORK, RIGHT_PEOPLE indicate the perceived importance of being born in a wealthy family, having educated parents, being educated, being ambitious, being hard-working and knowing the right people for success in life. Control variables are self-reported age, education, parents' education, gender, income, inhabitants of the town of residency, political preferences, and the number of solved sliders in the real-effort task.

	Native Dictator		Immigrant Dictator	
	Model (I) Equal Op	Model (II) Unequal Op	Model (III) Equal Op	Model (IV) Unequal Op
WEALTHY_FAMILY	0.063	0.238	0.176	−0.843***
	(0.146)	(0.170)	(0.167)	(0.216)
EDUCATED_PARENTS	−0.153	0.245	0.333	0.426
	(0.190)	(0.218)	(0.281)	(0.277)
EDUCATED	−0.237	−0.380	−0.198	−0.454
	(0.366)	(0.343)	(0.441)	(0.480)
AMBITIOUS	0.153	0.381	1.067***	−0.210
	(0.252)	(0.293)	(0.260)	(0.314)
HARD_WORK	−0.063	0.303	−0.678***	−0.248
	(0.222)	(0.225)	(0.202)	(0.341)
RIGHT_PEOPLE	−0.200	−0.437	0.253	0.384
	(0.223)	(0.243)	(0.268)	(0.287)
Constant	5.902*	5.184*	−4.117	0.712
	(2.321)	(2.491)	(4.168)	(3.410)
Control Variables	Yes	Yes	Yes	Yes
Observations	168	227	197	297
Prob > Chi^2	0.329	0.032	0.000	0.000

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$. Dependent variable: INGROUP_TRANSFERS. Standard errors in parentheses.

Table A6: Tobit regression on the effects of social ties with out-group transfers under equal and under unequal opportunities by native Germans and immigrants as the dependent variables. Possible transfers range from €0 to €12. Self-reported frequency of social contacts with immigrants by native Germans in the private, professional and public domain are indicated by TIES_IMM_PRIV, TIES_IMM_PROF, TIES_IMM_PUB. Self-reported frequency of social contacts with native Germans by immigrants in the private, professional and public domain are indicated by TIES_NAT_PRIV, TIES_NAT_PROF, TIES_NAT_PUB. Control variables are self-reported age, education, parents' education, gender, income, inhabitants of the town of residency, political preferences, and the number of solved sliders in the real-effort task.

	Native Dictator		Immigrant Dictator	
	Model (I)	Model (II)	Model (III)	Model (IV)
	Equal Op	Unequal Op	Equal Op	Unequal Op
TIES_IMM_PRIV	0.477	0.212		
	(0.254)	(0.312)		
TIES_IMM_PROF	−0.315	0.274		
	(0.270)	(0.275)		
TIES_IMM_PUB	0.503	−0.872***		
	(0.293)	(0.293)		
TIES_NAT_PRIV			−0.526	−0.084
			(0.433)	(0.285)
TIES_NAT_PROF			0.428	0.422*
			(0.318)	(0.214)
TIES_NAT_PUB			−0.362	0.228
			(0.415)	(0.367)
Constant	2.665	4.328*	0.613	−2.835
	(2.045)	(2.196)	(1.711)	(1.782)
Control Variables	Yes	Yes	Yes	Yes
Observations	150	212	194	289
Prob > Chi^2	0.007	0.001	0.107	0.003

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$. Dependent variable: OUTGROUP_TRANSFERS. Standard errors in parentheses.

Table A7: Tobit regression on the effects of stereotypes along the dimensions competence and warmth with out-group transfers under equal and under unequal opportunities by native Germans and immigrants as the dependent variables. Possible transfers range from €0 to €12. Perceptions of native Germans are denoted by COMPETENCE_NAT, CONFIDENCE_NAT, WARMTH_NAT, HONESTY_NAT, SUCCESS_NAT and EDUCATION_NAT for perceived competence confidence, warmth, honesty, success and education of natives on 7-point Likert scales. Perceptions of immigrants are denoted by COMPETENCE_IMM, CONFIDENCE_IMM, WARMTH_IMM, HONESTY_IMM, SUCCESS_IMM EDUCATION_IMM for perceived competence confidence, warmth, honesty, success and education of immigrants on 7-point Likert scales. Control variables are self-reported age, education, parents' education, gender, income, inhabitants of the town of residency, political preferences, and the number of solved sliders in the real-effort task.

	Native Dictator		Immigrant Dictator	
	Model (I)	Model (II)	Model (III)	Model (IV)
	Equal Op	Unequal Op	Equal Op	Unequal Op
COMPETENCE_IMM	0.094	0.088		
	(0.363)	(0.485)		
CONFIDENCE_IMM	−0.121	−0.517*		
	(0.240)	(0.240)		
WARMTH_IMM	−0.369	0.502		
	(0.401)	(0.333)		
HONESTY_IMM	0.020	0.064		
	(0.484)	(0.289)		
SUCCESS_IMM	−0.023	0.325		
	(0.240)	(0.261)		
EDUCATION_IMM	0.382	−0.470		
	(0.313)	(0.272)		
COMPETENCE_NAT			−0.187	0.352
			(0.390)	(0.373)
CONFIDENCE_NAT			0.031	−0.385
			(0.268)	(0.206)
WARMTH_NAT			−0.455	−0.631**
			(0.256)	(0.240)
HONESTY_NAT			0.069	0.597
			(0.279)	(0.330)
SUCCESS_NAT			0.389*	0.331
			(0.194)	(0.239)
EDUCATION_NAT			−0.377	−0.088
			(0.232)	(0.231)
Constant	3.275	3.490	2.162	−3.402
	(2.871)	(2.512)	(2.230)	(2.052)
Control Variables	Yes	Yes	Yes	Yes
Observations	150	212	194	289
Prob > Chi^2	0.034	0.005	0.084	0.000

*$p < 0.05$, **$p < 0.01$, ***$p < 0.005$. Dependent variable: OUTGROUP_TRANSFERS. Standard errors in parentheses.

Table A8: Spearman correlation matrix with control variables. AGE represents the participants age in years. The variable POL_LEFT-RIGHT represents a 7-point Likert scale on political preferences from left to right. MALE represents a dummy variable for gender taking a value of 1 for male participants and 0 for female participants. INCOME indicates the self-reported income of participants on a 5-point scale. INHABITANTS indicates the number of inhabitants of the participants' town of residence. EDUCATION and EDUCATION_PARENTS represent the education level of the participant and her parents, respectively. PERFORMANCE indicates the number of correctly positioned sliders in the real-effort task.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MALE	1							
AGE	0.191***	1						
INCOME	0.174***	0.407***	1					
EDUCATION	0.024	-0.029	0.216***	1				
EDUCATION_PARENTS	0.082***	-0.054*	0.105***	0.378***	1			
INHABITANTS	-0.001	-0.112***	-0.020	0.141***	0.144***	1		
POL_LEFT-RIGHT	0.083***	0.129***	0.113***	-0.019	-0.019	-0.086***	1	
PERFORMANCE	0.099***	-0.176***	0.033	0.107***	0.107***	0.079***	-0.003	1

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.005$.

A3 Instructions of the Experiment

Disclaimer

Welcome and thank you very much for your interest! We are researchers at various universities in Austria, the Netherlands and Sweden conducting an online study on human behaviour. Your participation in this study is voluntary and anonymous. All data collected will be anonymized, not passed on to third parties and used exclusively for scientific purposes. This study is about your behaviour and attitudes towards social issues. This study includes a task where you can earn up to € 12 in addition to the Opinion Points you receive for your participation. However, only a portion of the participants will receive this additional payout for the task, which will then be credited to those participants in the form of Opinion Points worth the personal payout amount (up to € 12). A payout can only be made when this study has been completed.

In the course of this study, we collect, in anonymised form, data regarding your country of birth, income and political preferences, among other things, which could be perceived as very personal due to their sensitive nature. We do this because this data is essential for our research. We fully understand if you do not wish to participate and answer these questions due to the sensitive nature of this information.

If you agree, please select "I would like to participate". If you select "I do not wish to participate", the study will be terminated and no data will be collected or stored.

- ○ I would like to participate
- ○ I would not like to participate

Next

Introduction

Thank you very much for your participation! Your contribution is important for our research. This study will take about 15 minutes to complete and you can earn up to € 12 worth of opinion points in addition to the opinion points you receive for participating.

Important Notes:

Please read all information carefully. This is essential for your payout chances and for the quality of our research.

1. this study should be conducted on a device with a working mouse. If you are using a click/touchpad of a laptop, your payout chances may be reduced.

2. this study does not support older versions of Internet Explorer (IE10 or older) We therefore ask that you upgrade to the latest version of Internet Explorer (IE11) or another browser and copy this link to the new browser window.

3. this study adheres to the principles of economic experiments: participants are not deceived and all payouts are real and actually take place.

*** Please answer the questions below to ensure that you have read the text carefully. To start the study, please click on "Next" afterwards. If you do not see a "Continue" button, it is because you have a Java Script Blocker enabled. In this case, please deactivate it and reload this page. Attention: In this study you cannot return to previous pages. ***

How much more can you earn in the form of opinion points from this study?

- ○ up to € 3
- ○ up to € 6
- ○ up to € 12

Should you perform this study on a laptop with click/touchpad?

- ○ Yes
- ○ No

How much time will this study take approximately?

- ○ 15 Minuten
- ○ 20 Minuten
- ○ 30 Minuten

Are you born **outside of the European Union**?

- ○ Yes
- ○ No

Which of the statements below apply to you?

- ○ **Neither** of my parents was born in Germany.
- ○ **One** of my parents was born in Germany.
- ○ **Both** of my parents was born in Germany.

Which of the statements below apply to you?

- ○ **Neither** of my parents was born **outside** of the European Union.
- ○ **One** of my parents was born **outside** of the European Union.
- ○ **Both** of my parents were born **outside** of the European Union.

Next

A3.0.1 *UNOP*

Description of the task

On the next page you will see **48** sliders. The task is to place as many sliders as possible exactly in the middle within **two minutes -** i.e. exactly at a value of "**50**". For each correctly positioned slider you get one point. You can reposition each slider as often as you like. After the time is up, you will be automatically redirected and your personal total score will be displayed.

If you have placed more sliders correctly in the middle than half of all previous participants, you will be in the **high score group** and receive **€ 12** for the task. Otherwise you will be in the **low score group** and will **not receive a payoff** .

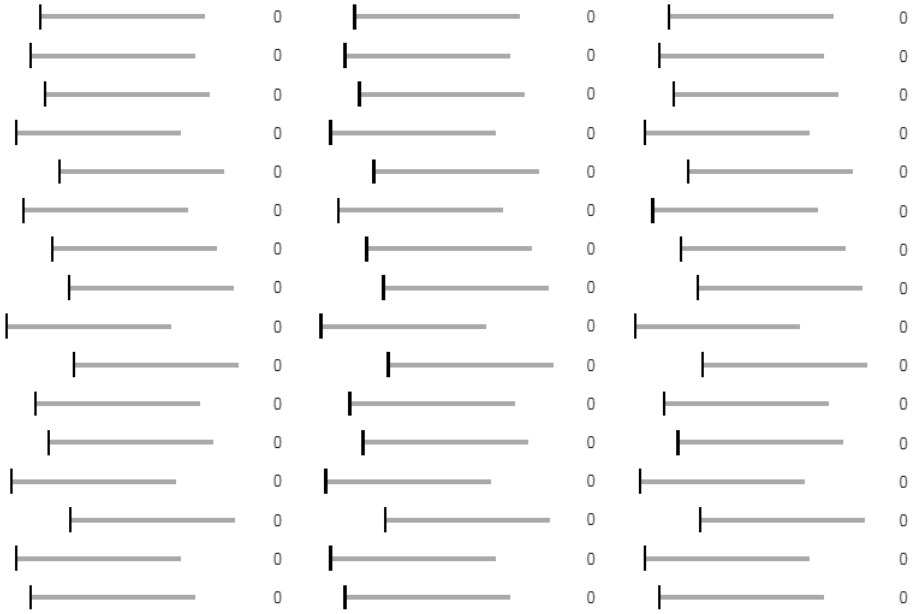
Important: **Not all** participants have **equal chances** in this task. A **randomly** selected half of participants has **bad luck**. Here 6 sliders are subtracted from the individual result. If these participants end up in the low score group and therefore do not receive a payout for the task, the **decisive reason** is **either** their poor performance **or** bad luck.
The other half of the participants have **no bad luck**. Here **no** sliders are subtracted from the individual result. If these participants end up in the low score group and therefore do not receive any payoff for the task, the **decisive reason** is **solely** their lack of performance.
Approximately **one third** of the unlucky participants who end up in the low score group after the task and therefore do not receive a payoff for the task will be in this grup due to **bad luck**.

Below you will find a slider for practice. Due to the limited time available for the task, you should familiarize yourself well with it.

**** Please click on "START", when you are ready for the task. The countdown will then start immediately. ****

START

Place as many sliders on a value of "**50**" as you like. For each correctly placed slider you will receive one point. You have **two minutes** time.



0 1 2 8

End task early

You had **no** bad luck! No sliders are subtracted from your personal score.

Next

You have **bad luck!** Six sliders are subtracted from your personal score.

Next

You have placed **11** sliders correctly. This results in a personal total score of **11**.

With this result you belong to the **high score** group and will receive **€ 12** for the task.

In a next step we will ask you to decide **which part (€ 0 to € 12) of you payoff for the task** you would like to send to a randomly selected participant.

Note: **Please note that the amount you send will be deducted from your payout for the task.**

Additional information about the participant randomly assigned to you:

- **Older than 18 years**
- **Resident in Germany**
- **Has a migration background**
- Belongs to the **low score group** and, thus, does **not receive any payoff** for the task.

Reminder: Not all participants had equal chances in this task. For a total of about **one third** of the unlucky participants from the low score group who receive no payoff for the task **the decisive reason** for belonging to this group is **bad luck**.

Next

Please select the four correct facts about your randomly allocated participant:

- **Older than 18 years**
- **Resident in Germany**
- **Has a migration background**
- Belongs to the **low score group** and, thus, does **not receive any payoff** for the task.

Reminder: Not all participants had equal chances in this task. For a total of about **one third** of the unlucky participants from the low score group who receive no payoff for the task **the decisive reason** for belonging to this group is **bad luck**.

- ☐ Older than 18 years
- ☐ Belongs to the high score group
- ☐ Resident in Germany
- ☐ Younger than 18 years
- ☐ No resident in Germany
- ☐ Has no migration background
- ☐ Belongs the the low score group
- ☐ Has a migration background

For how many participants from the low score group is **bad luck** the **decisive reason** for belonging to this group and therefore not receiving any payoff for the task ?

- ○ roughly one third of participants
- ○ roughly one fourth of participants
- ○ roughly one fifth of participants

Next

You have placed **11** sliders correctly. This results in a personal total score of **11**.

With this result you belong to the **high score** group and will receive **€ 12** for the task.

In a next step we will ask you to decide **which part (€ 0 to € 12) of you payoff for the task** you would like to send to a randomly selected participant.

Note: **Please note that the amount you send will be deducted from your payout for the task.**

Additional information about the participant randomly assigned to you:

- **Older than 18 years**
- **Resident in Germany**
- **Has no migration background**
- Belongs to the **low score group** and, thus, does **not receive any payoff** for the task.

Reminder: Not all participants had equal chances in this task. For a total of about **one third** of the unlucky participants from the low score group who receive no payoff for the task **the decisive reason** for belonging to this group is **bad luck**.

Next

Please select the four correct facts about your randomly allocated participant:

- **Older than 18 years**
- **Resident in Germany**
- **Has no migration background**
- Belongs to the **low score group** and, thus, does **not receive any payoff** for the task.

Reminder: Not all participants had equal chances in this task. For a total of about **one third** of the unlucky participants from the low score group who receive no payoff for the task **the decisive reason** for belonging to this group is **bad luck**.

- ☐ Has no migration background
- ☐ No resident in Germany
- ☐ Younger than 18 years
- ☐ Resident in Germany
- ☐ Belongs to the high score group
- ☐ Has a migration background
- ☐ Belongs the the low score group
- ☐ Older than 18 years

Next

Decision on the amount of the transfer payment

You can now send any **part of your payout for the task** to the **participant** described before.

After completion of the data collection and the execution of all transactions in a few weeks, you can view a list of all executed transactions to the randomly assigned participants.

€ _____ of my payoff for the task should be sent to the previously described randomly allocated participant (please enter a value between 0 and 12). If you would like to send a decimal amount (maximum of two decimals), use a dot as decimal seperator.

Would you like to see a list of all transactions made to the randomly assigned participants?

- ○ Yes
- ○ No

**** When you have made your decisions, please click on "Send Transfer" ****

Send Transfer

What do you think is the **decisive reason** for the fact that **the previously described participant** belongs to the **low score group** and thus **does not receive any payoff** for the task?

- ○ Bad luck
- ○ Lack of performance

Next

A3.0.2 *EQOP*

Description of the task

On the next page you will see **48** sliders. The task is to place as many sliders as possible exactly in the middle within **two minutes -** i.e. exactly at a value of "**50**". For each correctly positioned slider you get one point. You can reposition each slider as often as you like. After the time is up, you will be automatically redirected and your personal total score will be displayed.

If you have placed more sliders correctly in the middle than half of all previous participants, you will be in the **high score group** and receive **€ 12** for the task. Otherwise you will be in the **low score group** and will **not receive a payoff** .

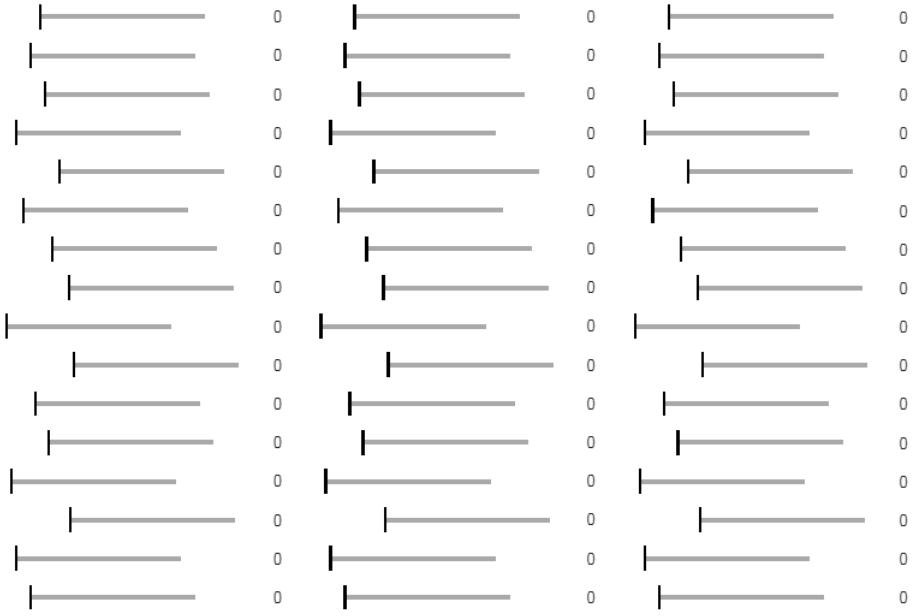
Important: **All** participants have **equal chances** in this task. If participants end up in the low score group and therefore do not receive any payoff for the task, the **decisive reason** is **solely** their lack of performance.

Below you will find a slider for practice. Due to the limited time available for the task, you should familiarize yourself well with it.

**** Please click on "START", when you are ready for the task. The countdown will then start immediately. ****

START

Place as many sliders on a value of "**50**" as you like. For each correctly placed slider you will receive one point. You have **two minutes** time.



0 1 2 8

End task early

You have placed 11 sliders correctly. This results in a personal total score of 11.

With this result you belong to the **high score** group and will receive **€ 12** for the task.

In a next step we will ask you to decide **which part (€ 0 to € 12) of you payoff for the task** you would like to send to a randomly selected participant.

Note: **Please note that the amount you send will be deducted from your payout for the task.**

Additional information about the participant randomly assigned to you:

- **Older than 18 years**
- **Resident in Germany**
- **Has a migration background**
- Belongs to the **low score group** and, thus, does **not receive any payoff** for the task.

Reminder: All participants had equal chances in this task. For participants from the low score group who receive no payoff for the task **the decisive reason** for belonging to this group is **solely** a **lack of performance**.

Next

Please select the four correct facts about your randomly allocated participant:

- **Older than 18 years**
- **Resident in Germany**
- **Has a migration background**
- Belongs to the **low score group** and, thus, does **not receive any payoff** for the task.

Reminder: All participants had equal chances in this task. For participants from the low score group who receive no payoff for the task **the decisive reason** for belonging to this group is **solely** a **lack of performance**.

- ☐ Has no migration background
- ☐ Younger than 18 years
- ☐ No resident in Germany
- ☐ Belongs to the high score group
- ☐ Older than 18 years
- ☐ Belongs the the low score group
- ☐ Resident in Germany
- ☐ Has a migration background

Next

You have placed **11** sliders correctly. This results in a personal total score of **11**.

With this result you belong to the **high score** group and will receive **€ 12** for the task.

In a next step we will ask you to decide **which part (€ 0 to € 12) of you payoff for the task** you would like to send to a randomly selected participant.

Note: **Please note that the amount you send will be deducted from your payout for the task.**

Additional information about the participant randomly assigned to you:

- **Older than 18 years**
- **Resident in Germany**
- **Has no migration background**
- Belongs to the **low score group** and, thus, does **not receive any payoff** for the task.

Reminder: All participants had equal chances in this task. For participants from the low score group who receive no payoff for the task **the decisive reason** for belonging to this group is **solely** a **lack of performance**.

Next

Please select the four correct facts about your randomly allocated participant:

- **Older than 18 years**
- **Resident in Germany**
- **Has no migration background**
- Belongs to the **low score group** and, thus, does **not receive any payoff** for the task.

Reminder: All participants had equal chances in this task. For participants from the low score group who receive no payoff for the task **the decisive reason** for belonging to this group is **solely** a **lack of performance**.

- ☐ Resident in Germany
- ☐ No resident in Germany
- ☐ Belongs the the low score group
- ☐ Belongs to the high score group
- ☐ Older than 18 years
- ☐ Has a migration background
- ☐ Has no migration background
- ☐ Younger than 18 years

Next

Decision on the amount of the transfer payment

You can now send any **part of your payout for the task** to the **participant** described before.

After completion of the data collection and the execution of all transactions in a few weeks, you can view a list of all executed transactions to the randomly assigned participants.

€ _____ of my payoff for the task should be sent to the previously described randomly allocated participant (please enter a value between 0 and 12). If you would like to send a decimal amount (maximum of two decimals), use a dot as decimal seperator.

Would you like to see a list of all transactions made to the randomly assigned participants?

- ○ Yes
- ○ No

**** When you have made your decisions, please click on "Send Transfer" ****

Send Transfer

A3.0.3 *Exit Questionnaire*

Perception on the creation of financial prosperity

Please evaluate the various factors in terms of their importance in achieving financial prosperity in life.

How important do you think it is to **come from a wealthy family**?

not important at all ○ ○ ○ ○ ○ ○ ○ very important

How important do you think it is to **have educated parents**?

not important at all ○ ○ ○ ○ ○ ○ ○ very important

How important do you think it is to **be well educated yourself?**

not important at all ○ ○ ○ ○ ○ ○ ○ very important

How important do you think it is to **be ambitious**?

not important at all ○ ○ ○ ○ ○ ○ ○ very important

How important do you think it is to **work hard**?

not important at all ○ ○ ○ ○ ○ ○ ○ very important

How important do you think it is to **know the right people**?

not important at all ○ ○ ○ ○ ○ ○ ○ very important

Next

Interaction with social groups

On average, how often do you have contact with people with a migration background in your private, professional and public life? Contact can reach from exchanging a few words to joint activities.

	Daily	At least once a week	At least once a month	Less often or never	Do not know
People **with** a migration background **in your private life** (Friends, family, acquaintances etc.)	○	○	○	○	○
People **with** a migration background **in your professional environment** (Colleagues from work, study or training etc.)	○	○	○	○	○
People **with** a migration background **in public spaces** (Doctors, waiters, neighbors)	○	○	○	○	○

Next

Interaction with social groups

On average, how often do you have contact with people without a migration background in your private, professional and public life? Contact can reach from exchanging a few words to joint activities.

	Daily	At least once a week	At least once a month	Less often or never	Do not know
People **without** a migration background **in your private life** (Friends, family, acquaintances etc.)	○	○	○	○	○
People **without** a migration background **in your professional environment** (Colleagues from work, study or training etc.)	○	○	○	○	○
People **without** a migration background **in public spaces** (Doctors, waiters, neighbors)	○	○	○	○	○

Next

Perception of societal groups

Please evaluate how you perceive the social group of people with a migration background on the basis of the different characteristics.

The following questions deal with the perception of which social group in Germany?

- ○ People with a migration background
- ○ People without a migration background

How **competent** are people with a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

How **confident** are people with a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

How **warm** are people with a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

How **sincere** are people with a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

How **economically successful** are people with a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

How **educated** are people with a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

Next

Perception of societal groups

Please evaluate how you perceive the social group of people without a migration background on the basis of the different characteristics.

The following questions deal with the perception of which social group in Germany?

- ○ People with a migration background
- ○ People without a migration background

How **competent** are people without a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

How **confident** are people without a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

How **warm** are people without a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

How **sincere** are people without a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

How **economically successful** are people without a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

How **educated** are people without a migration background in your opinion?

not at all ○ ○ ○ ○ ○ ○ ○ very

Next

Other Informationen

The following questions are essential for our research. Please answer them correctly.

What is the highest educational level you have achieved so far?

- ○ No school education
- ○ Primary School
- ○ Secondary School
- ○ High School
- ○ Bachelor's degree
- ○ Diploma study
- ○ Master's degree
- ○ Doctoral degree/PhD

What is the highest level of education your parents achieved? In case of discrepancies, the qualification of the parent with the highest educational level achieved counts.

- ○ No school education
- ○ Primary School
- ○ Secondary School
- ○ High School
- ○ Bachelor's degree
- ○ Diploma study
- ○ Master's degree
- ○ Doctoral degree/PhD

You are currently...?

- ○ Workers/employees
- ○ Self employed
- ○ Unemployed and looking for work
- ○ Unemployed and currently not looking for work
- ○ Student
- ○ Homemaker
- ○ Retired
- ○ Not able to work

In which state do you live?

- ○ Baden-Württemberg
- ○ Bayern
- ○ Berlin
- ○ Brandenburg
- ○ Bremen
- ○ Hamburg
- ○ Hessen
- ○ Mecklenburg-Vorpommern
- ○ Niedersachsen
- ○ Nordrhein-Westfalen
- ○ Rheinland-Pfalz
- ○ Saarland
- ○ Sachsen
- ○ Sachsen-Anhalt
- ○ Schleswig-Holstein
- ○ Thüringen

How many inhabitants does your residence have?

- ○ < 5.000
- ○ 5.000 - 20.000
- ○ 20.000 - 100.000
- ○ 100.000 - 500.000
- ○ > 500.000

Which of the below positions characterizes your political preferences best?

Left ○ ○ ○ ○ ○ ○ ○ Right

What is your total annual gross income in EURO (total income before tax)? (You do not need to know your total annual gross income exactly, but we ask you to choose one of the areas below where you are very sure that your total annual gross income is in it).

- ○ 0 € - 15.000 €
- ○ 15.001 € - 26.000 €
- ○ 26.001 € - 40.000 €
- ○ 40.001 € - 61.000 €
- ○ > 61.000 €

Which browser did you use for this study?

- ○ Edge
- ○ Google Chrome
- ○ Internet Explorer (IE11)
- ○ Mozilla Firefox
- ○ Opera
- ○ Safari
- ○ Sonstiger Browser

Finish

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Rene Schwaiger, Jürgen Huber, Michael Kirchler, Daniel Kleinlercher, Utz Weitzel

Unequal Opportunities, Social Groups, and Redistribution: Evidence from the General Population

Abstract
In this paper we investigate the generalizability of the role of unequal opportunities and social group membership in redistributive preferences for the general population. We present results from a large-scale online experiment with more than 4,000 participants. The experiment consists of a real-effort task and a subsequent dictator game with native Germans and immigrants to Germany. We find that dictator transfers to the own group by native Germans and immigrants are higher under unequal opportunities than under equal opportunities. While we confirm the main findings reported in previous literature regarding the role of inequality of opportunity in redistribution for native Germans and immigrants, we find distinctively different patterns between both groups concerning the influence of social group membership on redistribution. In particular, immigrant dictators transfer more to in-group than to out-group receivers under unequal opportunities and do not compensate unequal opportunities for out-group members, which we do not find among native dictators. We conclude that in order to increase the understanding of patterns reported in the literature, it is crucial to also investigate the external validity of findings with general population samples and to explicitly cover participants such as immigrants who represent important parts of our society.

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