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Abstract

A large body of evidence shows that social identity affects behavior. However, our understanding of the substantial variation of these behavioral effects is still limited. We use a novel laboratory experiment to measure differences in preferences for social identities as a potential source of behavioral heterogeneity. Facing a trade-off between monetary payments and belonging to different groups, individuals are willing to forego significant earnings to avoid belonging to certain groups. We then show that individual differences in these foregone earnings correspond to the differences in discriminatory behavior towards these groups. Our results illustrate the importance of considering individual heterogeneity to fully understand the behavioral effects of social identity.

JEL Codes: C91, C92, D90
Keywords: Social Identity, Identification Preferences, Social Preferences, Outgroup Discrimination, Behavioral Heterogeneity, Social Status, Social Distance

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1 Introduction

Individuals' social identity – their sense of *who they are* based on their perceived membership in social groups – has substantial effects on *how they act*.[1] Accordingly, a large literature shows the effects of social identity across a broad variety of domains including optimal institutional design (Akerlof and Kranton 2002, 2005, Fryer and Torelli 2010), preferences for redistribution (Klor and Shayo 2010), female labor supply and the gender pay gap (Bertrand et al. 2015), dishonest behavior and crime, and even risk-taking and amplified dynamics in financial markets (Cohn et al. 2014, 2015a,b). However, recent studies show that the behavioral effects of social identity do not only vary across settings but also across individuals (Kranton et al. 2018, Paetzel and Sausgruber 2018, Enke et al. 2019, Müller forthcoming). Fully understanding the role of social identity in shaping human behavior hence requires a closer investigation of the determinants of this individual heterogeneity.

In this paper, we investigate the role of individual preferences regarding different social identities ("identification preferences") for behavioral heterogeneity using a novel laboratory experimental approach. We consider identification preferences to reflect which social categories individuals prefer to feel belonging to. For instance, an African American alumna of Stanford, born in Wisconsin, working for a bank in New York can, among others, identify with her gender, race, alma mater, origin, occupation, or current residence. To measure the corresponding preferences regarding such alternatives, participants in our experiment face a tradeoff between monetary payments and joining groups with different characteristics. The monetary valuations for different group memberships can then be interpreted as a revealed preference ordering over different social identities at the individual level. In the second part of the experiment, each participant makes a series of distributional choices affecting herself as well as another individual. As these choices are made conditional on group-membership of the other player, we are able to investigate whether revealed identification preferences are related to differences in discriminatory behavior.

Our experimental setup accounts for several conceptual challenges that arise when empirically studying identification preferences. First, an individual's social identity is multi-dimensional: individuals are exposed to many different social categories whose salience and relevance vary over time (Tajfel 1974, Akerlof and Kranton 2000). This multi-dimensionality creates substantial ambiguity with respect to what individuals perceive to be available identities in a specific situation, such that the researcher has imperfect knowledge about the individual's perceived potential set of social identities. To address this issue, we recruit supporters of two different German football clubs at two different universities. At the beginning, all participants have to carry out a mathematics

[1] The feeling of belonging to a particular group leads to a stronger compliance with behavioral stereotypes (Shih et al. 1999, Benjamin et al. 2010). It segregates society by defining insiders and outsiders which serves as a basis for discrimination, for instance in distributional decisions (Chen and Li 2009, Kranton et al. 2016) or trust (Fershtman and Gneezy 2001). It also alters cooperation and coordination in groups (Eckel and Grossman 2005, Chen and Chen 2011) and the extent to which norms are enforced (Goette et al. 2006).

task (adding numbers) individually before we assign them to groups. Groups differ with respect to the football club their members support and the performance (above or below median) of their members in the mathematics task. This yields four different types of groups: "good" and "bad" groups for supporters of each of the two clubs. This creates a social environment with a fixed, known set of social categories.

Second, identity is a cognitive concept: it is not a part of how people act, but how people think (Tajfel 1974, Tajfel and Turner 1979). Hence, it lacks a straightforward behavioral – and thus observable – counterpart. To make identification preferences observable, we assume that joining a group is related to the strength by which an individual wants to identify with that particular group. We confront participants with the possibility of being reassigned to one of the other groups. Using the Becker-DeGroot-Marschak (1964) procedure, we elicit each individual's *willingness to accept reassignment to each of the alternative groups* and interpret this as revealing a preference for identifying with this particular group. Importantly, our design even enables us to elicit these differences *within-subject*: we allow individuals to express a different willingness to accept reassignment to different alternative groups.

Third, in almost all natural settings, different identities have different "instrumental values". This means that an apparent identification preference can typically be rationalized by some sort of expected future (material) payoff (Algan et al. 2013). Think, for example, of joining a political party: while it might sound reasonable to interpret such a decision as being driven by identity considerations, it is not clear how to disentangle the identity motive from indirect material motives through improved career and network opportunities within the party. To really isolate pure identification preferences, it is crucial to provide a setting in which such strategic concerns about the instrumental value of identity are minimized.[2] In our experiment, the high degree of anonymity and the control over monetary payoffs eliminate any potential direct or indirect incentives for group-switching within or outside the experiment.

We find that individuals generally hold meaningful identification preferences, as they are willing to sacrifice a substantial part of their experimental earnings to manipulate their membership in specific groups. In particular, the monetary amounts they are willing to forego depend on the characteristics of the group in question. This dependency is in line with the theoretical literature, where it is commonly assumed that individuals prefer to identify with groups whose stereotypes are more similar to their own characteristics (lower *social distance*) and with groups whose average salient characteristics are superior to those of comparison groups (higher *social status*) (Tajfel et al. 1971, Tajfel 1972, 1978, Tajfel and Turner 1979, Turner et al. 1987, Akerlof and Kranton 2000, Shayo 2009, Bernard et al. 2016, Akerlof 2017). Our experiment is explicitly designed to allow for these two dimensions to vary across different groups and thus to analyze their role in detail: we

[2] In a recent field experiment, Bursztyn et al. (forthcoming) argue along similar lines in order to identify political ideology as an intrinsic motivation for political behavior.

assume that participants perceive a larger social distance from groups of supporters of the other football club and perceive groups with a better mathematics performance to have a higher social status. Our results show that both dimensions carry a substantial weight in revealed identification preferences.

Regarding our central research objective, we are able to confirm the conjecture that revealed identification preferences matter for subsequent behavior. In particular, they are systematically related to behavioral heterogeneity in group-specific social preferences as measured using dictator games. Individuals who reveal a stronger preference for identifying with their initial group discriminate more strongly between this group and other groups in allocation choices. We also find individuals discriminating not just between in- and outgroups but even among different outgroups. Strikingly, even this within-subject-heterogeneity in allocation choices is paralleled by the within-subject-heterogeneity in identification preferences: differences in revealed identification preferences correlate with subsequent allocation choices even up to the behavioral variation towards *different* outgroups.

Our paper contributes to the literature in three ways: (i) it describes a new experimental strategy to elicit identification preferences, (ii) it documents the role social distance and social status play in shaping them, and (iii) it shows their relevance for explaining behavioral heterogeneity. It thereby connects to the rapidly growing literature on social identity in economics in general (Akerlof and Kranton 2000) and in experimental economics in particular (Eckel and Grossman 2005, Chen and Li 2009). Within this literature, the following papers can also be interpreted as investigating preferences for social identity: Hargreaves-Heap and Zizzo (2009) study the "value of groups" in the context of trust games. They document substantial "additional psychological benefits of group membership" as participants are willing to pay more to stay in their initial groups than the expected material benefits would justify. Within our framework, this could be interpreted as indicating a general preference for identification – a result we are able to confirm in our analysis.[3] Charness et al. (2014) also experimentally investigate the trade-off between group choice and monetary payments. In a public goods game setting, they vary whether individual group members differ in their prior social interaction (within the experiment) and their initial endowment levels. The main result is that differences in endowment levels dominate joint group activities in driving segregation of groups. One could interpret this finding as individuals trading-off these different characteristics against each other and thereby also revealing corresponding preferences for different social identities.

While these two papers also emphasize the notion of individual preferences for different group mem-

[3]Moreover, our experiment resolves a potential design issue of their approach: as the authors state, the interpretation of their findings "is complicated by a well-known wedge in experiments between the willingness-to-pay (WTP) and the willingness-to-accept (WTA) compensation that can arise through, for example, the influence of reference dependence effects" (p. 297). Our within-subject approach resolves this issue and hence complements the initial findings in that paper.

berships, our paper explicitly analyzes the relation between these valuations or preferences and the subsequent behavioral consequences in terms of outgroup discrimination. Fong and Luttmer (2009) make this connection similarly explicit: based on representative US data, they show that the closer potential donors feel to the perceived race of donation recipients, the more they actually donate. These results nicely complement ours, as claiming to "feel close" to a group can arguably be interpreted as a stated identification preference towards this group. Kranton et al. (2018) also share this spirit of our paper by considering individual heterogeneity with respect to identity related behavior. They classify individuals as "groupy" if they display ingroup bias independent of the particular nature of the group setting they are exposed to. This complements our findings insofar as "being groupy" could be interpreted as having quite accentuated general identification preferences. Further, they document differential behavioral effects according to this classification: groupy individuals are more likely to affiliate themselves with a political party, which speaks to our results on the link between identification preferences and identity-related behavior.

While our paper takes a preference-based perspective to explain behavioral heterogeneity in the context of social identity, some papers stress other aspects of decision-making. Guala and Filippin (2017) and Filippin and Guala (2017) question the interpretation of group identity effects as being preference-based and rather suggest them to be driven by heuristics and hence subject to framing effects. Other papers focus on the role of beliefs and show how they drive heterogeneity in social identity related behavior. In Ockenfels and Werner (2014) ingroup favoritism decreases when dictators know that recipients are actually not aware of the shared group membership, which is not consistent with a pure outcome-based social preferences mechanism. Tanaka and Camerer (2016) show that beliefs about the characteristics of potential outgroups explain differences in outgroup discrimination, while Grimm et al. (2017) document that beliefs about the behavior of other groups matter. While all these papers differ in the explanation for heterogeneous social identity related behavior they put forward, none of these explanations stand in explicit conflict to ours on identification preferences. For instance, even if the actual behavioral effects of social identity are the result of heuristics, the particular structure of these heuristics could be shaped by underlying identification preferences. Further, the results of Tanaka and Camerer (2016) and Grimm et al. (2017) are fully consistent with our framework as beliefs over the behavior and characteristics of other groups should in fact be a major determinant of the corresponding identification preferences regarding these groups. Finally, a shared feature of our paper and the latter two is the consideration of different potential outgroups and accordingly the possibility of differential outgroup discrimination, even though the underlying mechanisms differ substantially.

Finally, by suggesting identification preferences as an explanation for behavior in dictator games our paper also relates to the broader literature on the existence, heterogeneity, and stability of social preferences (Andreoni and Miller 2002, Charness and Rabin 2002, Engelmann and Strobel 2004, Fisman et al. 2007, Bellemare et al. 2008, Iriberri and Rey-Biel 2011, 2013, Breitmoser 2013, Schumacher et al. 2017, Bruhin et al. 2018).

The remainder of the paper is structured as follows. Section 2 provides a detailed description of our experimental design. Results are presented in Section 3. Finally, Section 4 provides a discussion of our findings and concludes.

2 Research Design

Assessing the structure of identification preferences and investigating their behavioral consequences requires reliable measurements of both. Whereas discrimination in dictator games across varying recipients is routinely used to measure the latter (Chen and Li 2009), there exists no established procedure to measure identification preferences. We therefore design a novel experimental protocol to do so.

2.1 Measuring Identification Preferences

In our laboratory experiment, we want individual choices to reveal identification preferences, i.e. the non-material utility an individual derives from belonging to a particular group. In order to achieve this, we first assign all participants to one of several specific initial groups. Subsequently, they face the possibility of reassignment to any of the other groups. Using the Becker-DeGroot-Marschak (1964) value-elicitation procedure (BDM), we elicit the monetary payment that would be required for each individual to accept this reassignment. Importantly, the laboratory environment permits us to explicitly control the monetary benefits and instrumental values associated with the different groups in our experiment. To that end, the monetary payments indicated within the BDM procedure do not have any explicit or implicit additional material consequence. We thereby avoid these decisions being affected by (expected) income effects arising from other stages, feelings of generalized reciprocity due to group performance-related payoffs (Yamagishi and Kiyonari 2000), or strategic considerations. Assuming that a stronger identification preference for some specific group characteristic corresponds to a lower required payment to join a group holding this characteristic, this procedure reveals individual identification preferences of our experimental participants in an incentive-compatible way.

In order for these identification preferences to be subject to meaningful interpretation, we expose participants to alternative groups who differ based on perceived social distance and social status. We expect individuals to reveal a preference for groups of higher status (Tajfel 1974), as they facilitate favorable comparisons to other groups (Tajfel et al. 1971, Tajfel 1972, 1978, Tajfel and Turner 1979) and for groups to which they have a lower social distance, i.e. whose defining characteristics are more similar to their own.[4]

[4]Social distance hence refers to the notion that identifying comes more naturally for an individual if her own actual characteristics match this category's stereotypes (Akerlof and Kranton 2000). Social distance is thus also related to the concept of homophily (McPherson et al. 2001, Girard et al. 2015, Currarini and Mengel 2016).

2.2 Experimental Design

The experiment consists of five stages. Groups are assigned and characteristics are formed and enhanced in the first two stages. In the third and fourth stages, we measure identification preferences and group-specific dictator game behavior, respectively. The fifth and final stage merely increases the psychological relevance of group membership. Figure 1 shows the timing of the experiment as well as the information provided to the participants at the beginning of each stage.[5] Prior to the main experiment, we conducted a pilot study which included the same experimental stages, but deviated with respect to some details. We discuss the experimental design and results of this pilot study briefly in Section 3.3 and provide further details in Appendix A.

Stage 1: Group Assignment

We conduct the experiment simultaneously in two laboratories. Participants' affiliation with one of two German professional football clubs serves as a first group assignment dimension. The participants are either supporters of Eintracht Frankfurt or 1. FC Köln. We specifically choose these two clubs as they share a long history in German professional football and mirror each other quite closely in terms of their historic and recent performance[6] which reduces the scope for additional social status concerns.[7] Within the groups of participants from each football club, we add a second group dimension by sorting participants according to their performance in a real-effort task. Following Bartling et al. (2009), we ask participants to solve as many arithmetic problems (adding three two-digit numbers) as possible in 90 seconds. Within each group of supporters in a session, we assign participants whose performance exceeds the median number of correctly solved math problems to the green group and those with an inferior score to the orange group.[8]

Conditional on their performance in the math task and their affiliation with the two football clubs, we then assign participants to non-overlapping groups of four: (i) a group of high performance (green) from Eintracht Frankfurt, (ii) a group of high performance (green) from 1. FC Köln, (iii) a group of low performance (orange) from Eintracht Frankfurt, and (iv) a group of low performance (orange) from 1. FC Köln. To emphasize the status-component of the real effort task even further, participants' screens display a winner's podium with the green group on top and the orange group standing next to it. The corresponding message says that participants assigned to the green group belonged to the top half of the participants from their football club in that session. Accordingly, participants in the orange group are informed that their performance is in the bottom half within their group of supporters.

[5] The instructions are provided in Appendix B.

[6] Both were founding members of the German Bundesliga, played around 1550 Bundesliga matches, and are ranked 9th and 10th in the all-time table. The historical performance of both clubs was very similar at the time when we conducted the experiment. Each of them won the German cup (DFB-Pokal) four times. Köln was relegated to the 2nd division (and afterwards promoted again to the Bundesliga) five times, Frankfurt four times.

[7] Note that the overwhelming majority of participants perceive the reputation of the two football clubs to be about equal. This suggests that there is no status difference between football clubs.

[8] We choose group colors such that they do not share any of the official colors of either of the two clubs.

We inform participants about the group assignment and the content of the following stage only *after* the completion of the real-effort task. Thus, when completing the task participants have no information about its purpose. This ensures that strategic considerations based on the ensuing task do not factor into the effort decision and thereby not actively influence group assignment. The performance in the math-task is not incentivized to rule out that the elicitation of preferences for identification is affected by prior earnings.

Stage 2: Group Enhancement

Recent evidence shows that successfully studying identity in the laboratory may often require enhancement through some joint activity (e.g. Eckel and Grossman 2005, Chen and Li 2009, Chen and Chen 2011). We therefore engage participants in a group quiz. The quiz consists of three quartets of pictures. For each of these three sets of four pictures, groups have to find an umbrella term and have 60 seconds to discuss the solution via the chat program.[9] Participants then enter their answers individually.[10] Even though we do not incentivize correct answers and do not provide feedback about the solutions to preclude that performance in the group task affects identification preferences, all participants actively engaged in all of their group's problems and entered at least one line per quiz.

Stage 3: Elicitation of Revealed Identification Preferences

In a first step, each of the four groups is attached a *randomly drawn* monetary value

$$\pi_{d,s}, d \in \{\text{Eintracht Frankfurt, 1. FC Köln}\}, s \in \{\text{high performance, low performance}\},$$

between 0 and 8 euro, *but not yet revealed* to the participants.[11] Importantly, to elicit clean identification preferences, group membership must not entail *any* other potential strategic benefits. The monetary group values are therefore *independent* of the groups' prior performance in the math task and group-quiz, so that different monetary values cannot give rise to feelings of guilt, spite, or reciprocity towards other group members.

We ask participants to state the minimum difference in the payment they would receive as a member of their own group and the payment they would receive as a member of any other group for which

[9] Participants are prohibited to discuss personal information during the chat phase and are informed that violation of this rule would result in expulsion from the experiment. Aside from this constraint, conversations are unrestricted. Chat-logs reveal that there was no communication about personal information. Since participants had no information about subsequent stages at the time of the group chats, they were also unable to discuss their choices in the following tasks in advance.

[10] Although participants are not bound by the prior group discussions, the chat-log reveals that almost all participants entered the group consensus in the chat.

[11] Throughout the paper, index d (s) refers to groups of supporters of the same football club (performance), whereas $-d$ ($-s$) refers to groups of supporters of the other football club (performance) from the perspective of the respective participant.

they accept a reassignment to the respective group, i.e. $WTA_k, k \in \{(d,-s),(-d,s),(-d,-s)\}$.[12] Out of the four groups, one participant is randomly selected for actual reassignment to a random group. She is reassigned to that group k only if the stated WTA_k is equal to or below the actual difference in monetary values between the respective groups. For example, if the group of the same football club, but different status was selected for reassignment, the participant would only be reassigned if $\pi_{d,-s} - \pi_{d,s} \geq WTA_{d,-s}$ holds.

Simply asking participants for their WTAs might make them feeling compelled to report a positive number and thereby artificially inflate the results. We therefore use scrollbars ranging from -8 euro to $+8$ euro. This highlights the possibility that stating a negative WTA (i.e. expressing to prefer another group to the initial one) is possible and allows us to specify a default, which we set at 0. Importantly, by only actually reassigning a single participant, the choice of the $WTAs$ does not depend on participants' beliefs about the behavior of the other participants, because participants are assured that the characteristics and composition of the other groups do not change apart from their own potential entry.

In order to make the payoffs in the third stage even more salient and ensure that every participant understands the payoff consequences of her decisions, we include comprehension questions which focus on the optimal strategy given a certain objective. More specifically, every individual has to state the optimal strategy for three types of individuals: (i) an individual who would like to remain with her initial group, (ii) one who would like to leave her initial group, and (iii) one who does not care about group membership and wants to maximize her own material payoffs.

A purely money-oriented individual would be willing to accept reassignment to any other group if the group's monetary value exceeds the one of her own group, given the information that the ensuing task in the new group does not yield any monetary benefits. The stated minimum difference for such an individual should thus be zero. We interpret any deviation in the stated WTA_k as a revealed identification preference as there are no other potential motives by design.[13]

Stage 4: Two-Person Dictator Games

Before revealing the realizations of the attached monetary group values and potential group reassignments, we ask every participant to make a series of decisions in dictator games to elicit group-specific social preferences. Individuals are matched in pairs of two with two different roles: dictator and receiver. The dictator is endowed with 10 euros, whereas the receiver is given 5 euros.

[12] As an illustration, an individual who states a positive WTA_k would accept reassignment to that group only if the payoffs of group k exceed the payoffs of her own group at least by the stated amount, i.e. if $\pi_k - \pi_{d,s} \geq WTA_k$. If the difference in payoffs between the two groups would fall below that level, she would prefer to remain with her initial group, even if the payoff of the other group is larger.

[13] Becker et al. (1964) show that this mechanism is incentive-compatible. There has been a recent debate on the reliability of the BDM mechanism for the measurement of WTP-WTA gaps to identify reference-dependence (Cason and Plott 2014, Bartling et al. 2015). However, given that our main results focus on within-participant differences between different $WTAs$, our approach appears robust towards these concerns.

The dictator can now share some of her endowment with the receiver, take some of the endowment from the receiver, or leave both players with the initial endowment. Giving or taking is restricted to increments of 10 cents. Every cent given to the receiver is doubled by the experimenter, every cent taken from the receiver is halved by the experimenter. Thus, giving (taking) is efficient (inefficient). [14]

Just as in the group selection stage, we use the strategy-method to collect decisions for all groups. Every individual has to choose an allocation between herself and another member of each of the three other groups as well as between herself and a member of her own group. For each participant, one game, one role (dictator or receiver), and one partner is randomly selected for payment at the end of the experiment. Importantly, members are matched based on the initial group assignment. This means that by switching groups in stage 3, a participant cannot affect the monetary payoff resulting from stage 4.

Stage 5: Picture Quiz

After all information is revealed (realizations of the monetary group payoffs of all four groups, the individual who has been selected for reassignment, and information about the potential new group composition), participants play the second sequence of picture puzzles. The procedures are identical to stage 2. If the randomly selected individual accepted reassignment by stating a sufficiently low WTA for the randomly selected group, she performs the quiz as a member of her new group. Correct solutions to the picture puzzles are again not incentivized, which is also clearly pointed out in the instructions.

2.3 Experimental Procedures

We conducted three independent computerized sessions using z-Tree (Fischbacher 2007). The sessions were run simultaneously at the Frankfurt Laboratory for Experimental Economic Research (FLEX) and the Cologne Laboratory for Economic Research (CLER) in August 2016. To ensure that supporters of the two clubs participated in the experiment, we targeted football fans within the subject pools and asked only supporters of the two clubs to sign up at the respective university. The participants sharing the same two characteristics were randomly divided into groups of four. Thus, each of the four groups was represented twice or thrice per session.[15] To channel the participants' focus on the two different dimensions of group characteristics, the respective football club's logo was displayed on all screens on the top right, while a group box at top center of the screen reminded them of their assignment to either the green or orange group. The logo and the

[14] Using this payoff structure, we build on a commonly used approach in the social psychology literature, going back to the seminal paper by Tajfel et al. (1971).

[15] 24 individuals took part per laboratory in one session, while 20 individuals took part per laboratory in two other sessions due to no-shows. In the latter two sessions, we have 3 high status groups and 2 low status groups per football club.

group box were removed on the group selection screen.

In total, 128 participants took part in our experiment. Sessions lasted from 75 to 90 minutes. Including the show-up fee of €4 paid to every participant, participants on average earned €17.42, with the minimum at €7.50 and the maximum at €35.20. Instructions were split into four parts and distributed sequentially. Participants had to answer two sets of control questions prior to stages 3 and 4 before they made their decisions. After completion of the five stages, the experiment concluded with a post-experimental questionnaire.

3 Results

We present our results in three parts. First, we focus on revealed identification preferences and their structure, more specifically the role of social status and social distance (Section 3.1). Then, we analyze how these identification preferences affect subsequent behavior in group-specific dictator games (Section 3.2). Finally, we discuss potential concerns and alternative explanations as well as the results from the pilot study (Section 3.3).

3.1 Revealed Identification Preferences

Figure 2 displays the average stated $WTAs$ for each of the three outgroups as well as the average WTA over all three groups (black bar) for all 128 participants. For an overwhelming majority of the participants, group affiliation holds sizeable value. On average, participants require a differential of 221.51 cents between the payoffs of their own group and the payoffs of the other groups to accept reassignment to another group. This value is not just statistically different from 0 (t-test: $p < 0.0001$), but also economically meaningful as it amounts to 55.4% of a participant's expected earnings of 4 euro from the group selection stage. Table 1 also shows that all outgroup-specific $WTAs$ are significantly larger than 0. Notably, for only 26.6% of the participants groups do not matter (average WTA of 0). Two participants state a negative WTA average for all three outgroups. However, while the WTA median is 142.44 cents, 22.7 percent of the participants even state average WTAs larger than 4 euro.

Positive valuations of own group membership could simply reflect a status quo bias and thus some sort of endowment effect with respect to the "endowed" initial group (Kahneman et al. 1986, Knetsch 1989, Hargreaves-Heap and Zizzo 2009). To rule this out, we exploit the within-subject structure of our design and compare $WTAs$ across different outgroups. In our experiment, a potential endowment effect would apply equally to all three outgroups and could therefore not explain differences in $WTAs$ across outgroups. At the individual level, we find that 58.6 percent of the participants ($n = 75$) state different $WTAs$ for at least two of the three outgroups. This share even increases to 79.4 percent when focusing only on those participants stating a $WTA > 0$. When looking at differences in identification preferences across groups in terms of magnitude (see Figure

3), we find the average standard deviation in $WTAs$ across groups amounting to 83.99 cents or 37.9 percent of the average stated WTA, which we consider to be quite substantial. Given this variation, we are confident that our results do not merely capture status quo bias, but reflect preferences for identification. Result 1 summarizes our findings up to this point.[16]

Result 1: Identification matters. *Participants are willing to forfeit a significant amount of money to join or stay in a particular group despite the lack of any material incentive to do so, thus revealing significant identification preferences.*

Our within-subject design also facilitates examining the particular structure of revealed identification preferences. Making use of our specific group assignment rules, we investigate whether revealed identification preferences in our experiment are in accordance with the theoretical foundations laid out in the social identity literature. More specifically, we ask whether we can organize identification preferences along two key dimensions of identification suggested by social psychology – social distance and social status.

To gauge the impact of social distance, we use the football club dimension of our group assignment. Participants' football club affiliation constitutes a natural source of perceived social distance. We contrast an individual's $WTAs$ for the two outgroups with the other math performance of the same football club and the other football club.[17] Varying only the football club affiliation of a group while holding math performance (social status) fixed allows to isolate the former's effect. Panel (a) of Figure 4 shows the $WTAs$ for the two groups. The graph indicates that social distance matters. The average $WTA^{Distance}$, i.e. $WTA_{-d,-s} - WTA_{d,-s}$, is 36.72 cents. Put differently, participants require roughly 37 cents more to accept being reassigned to the group from the other football club (grey bar) compared to the one from the same football club (black bar) (two-sided t-test: $p = 0.0338$).[18]

We apply the same strategy to identify the role of social status. Group assignment based on performance in a skill-based task like solving math-exercises induces social status in the sense that a higher performance is superior compared to a low performance. By focusing on the two outgroups from the other football club, we hold football club affiliation (social distance) fixed and only vary math performance. Panel (b) of Figure 4 shows participants' average WTA with respect to the group of the other club and high status (dark grey bar) and the group of the other club and low status (white bar). Computing $WTA^{Status} = WTA_{-d,\text{low math performance}} - WTA_{-d,\text{high math performance}}$,

[16] While the within-subject variation of WTA is clearly statistically significantly different from zero, at this point we cannot rule out that this variation is merely a product of random behavior on the side of the participants. However, as we will see below this variation also follows some systematic patterns, which suggests it does not simply result from chance.

[17] E.g., for an individual with high performance in the math task, we compare the $WTAs$ for the two low performance groups of the same and the other club.

[18] $WTA^{Distance}$ does not significantly vary across the two clubs (two-sided t-test: $p = 0.6415$). Figure 6 depicts the corresponding mean values (44.73 cents for Eintracht Frankfurt and 28.71 cents for 1.FC Köln).

we find that the average difference between these two groups amounts to 71.19 cents and is both economically (almost 18% of the expected payoff from that experimental stage) and statistically highly significant ($p = 0.0009$ in a two-sided t-test).

To analyze the effects of social distance and status in a regression framework, we estimate different specifications using the WTA to join a particular outgroup as the dependent variable and dummies for social status (which is 1 if the outgroup has a high math performance and 0 otherwise) and social distance (which is 1 if the outgroup stems from the other football club and 0 otherwise) as explanatory variables. Columns (1) and (2) of Table 2 report the results of pooled OLS regressions with and without individual specific controls (age, gender, and undergrad status). In column (3), we control for any unobserved heterogeneity which does not vary between outgroups by including individual fixed effects. In all three specifications the coefficients of both dummy variables are statistically significant and have the predicted signs, hence confirming the previous results.

Result 2: Social distance and social status matter. *Participants prefer to identify with groups (a) to which they have a lower social distance and (b) that have a higher social status.*

Having established that social distance and social status matter in aggregate, we now examine the between-individuals heterogeneity in their importance. 65 of the 128 participants do not distinguish between the two respective outgroups in the social distance dimension. 46 individuals prefer groups of their own football club, requesting 159.74 cents (39.9 percent of expected earnings) more to accept reassignment to the group of the other football club (see light grey bar in panel (a) of Figure 5). 17 participants, however, prefer groups of the other club, i.e. report a lower WTA. The average $WTA^{Distance}$ amounts to -155.76 cents (or 38.9 percent of expected earnings) for these individuals (white bar). Data from our post-experimental questionnaire show that these participants' perceptions of their own club's social status are significantly lower than for the other participants ($p = 0.0219$ in a two-sided t-test). This indicates that their decision might be driven by social status concerns, which for these participants could manifest themselves in the club affiliation as well.

68 participants state different WTAs for the two groups from the other club (social status dimension). While 53 participants prefer the high status group (average $WTA^{Status} = 226.74$ cents or 56.7 percent of expected earnings, see light grey bar in panel (b) of Figure 5), 15 individuals show a preference for the low status group (average $WTA^{Status} = 193.69$ cents; white bar). This heterogeneity is due to an asymmetry in the effect of status: individuals differ in their valuation of social status contingent on their own performance. While participants from the high status groups strongly and almost exclusively prefer the high status group, there is a less clear pattern for members of the low status groups. Only 8.33% of the participants from high status groups prefer low status groups (while 55.55% prefer high status groups). In contrast, among those from low status groups, 16.1% prefer low status groups (and only 37.5% prefer high status groups). The average

WTA^{Status} amounts to 88.17 cents for members of the high performance groups ($p = 0.0113$ in a two-sided t-test) and 49.36 cents for those in the low performance groups ($p = 0.0165$ in a two-sided t-test), as can be seen in Figure 6.[19]

These results demonstrate that social distance and social status are inherently intertwined, as participants might perceive social distance not only with respect to football club affiliation, but also with respect to status. Any variation in the status dimension automatically also induces differences in the social distance dimension, as differences in the characteristic that induces status imply a social distance in this characteristic as well. For individuals from a high status group, a high status group from the other club dominates a low status group from the other club in both social status and social distance. For individuals from a low status group, however, the high status group from the other club provides higher social status, but also larger social distance. Alternatively, the social identity literature suggests that individuals might devalue dimensions in which their ingroup performs poorly and focus on other dimensions instead (Turner and Brown 1978, Tajfel and Turner 1979, Hogg and Abrams 1988, Hornsey 2008). Consistent with that idea is Wichardt's (2008) argument that individuals who are confronted with different dimensions of group characteristics focus more on a particular group the more it offers them a positive contribution to their identity in a certain context. Akerlof (2017) focuses on a similar margin along which individuals can manage identity: reweighting "achievements" in different dimensions.

3.2 Behavioral Effects of Identification Preferences

We now investigate the relation between identification preferences and subsequent behavior and test whether the observed variation in identification preferences translates into heterogeneity in group-specific social preferences measured in the dictator game decisions in stage 4 of our experiment.

3.2.1 Preferences for Identification and Allocation Choices: Ingroup vs Outgroups

We start by comparing discrimination in allocation choices between a member of one's own group and a member of the three different outgroups. We define outgroup discrimination as choosing a less favorable allocation for a matching partner from one of the three outgroups compared to the one from the ingroup. According to this definition, 60 of 128 participants (46.9%) discriminate in their allocation decisions.

The share of individuals discriminating against outgroups is substantially higher for participants with a high average WTA. Whereas 56.3 percent of the participants whose average WTA is above the median discriminate against outgroups, the corresponding share is only 37.5 percent for participants with a WTA average below the median (see also panel (a) of Figure 7). This difference

[19] While this difference is sizeable in economic terms, it is, however, not statistically significant ($p = 0.3607$ in a two-sided t-test).

is statistically significant (Pearson-χ^2-test: $p = 0.034$, Fisher's exact test two-sided: $p = 0.051$).

Columns (1) and (2) of Table 3 augment the result presented above. They report marginal effects for logistic regressions of outgroup discrimination at the individual level on preferences for identification and a set of socio-demographic controls. The dependent variable is a dummy that takes the value of 1 if a participant discriminates against at least one outgroup in the allocation decisions and is 0 otherwise. We control for a participant's age, gender, and enrollment status (using a dummy variable that is equal to 1 if the participant is enrolled in a bachelor's program, and 0 otherwise). Standard errors are clustered at the group level and reported in parentheses. In column 1, identification preferences are measured using a median split of average WTA over the three outgroups. Closely mirroring the raw difference, individuals whose average WTA is above the median level are 19 percentage points more likely to discriminate against at least one outgroup. The marginal effect is statistically significant at the 10%-level ($p = 0.053$). In column (2), we employ the average stated WTA measured in euros over all three alternative groups as a more detailed, intensive margin measure of identification preferences. While the marginal effect has a positive sign, it remains statistically insignificant at conventional levels. The extensive margin effect reported above can thus not be found at the intensive margin. However, using WTA as explanatory variable assumes a linear relationship between WTA and the probability to discriminate against outgroups which appears quite restrictive. Additionally, the dependent variable in these estimations is binary which does not allow to investigate heterogeneity in dictator game giving at the intensive margin. The next step of our analysis therefore exploits the within-subject dimension in order to get a more comprehensive picture.

Next, we analyze allocation choices at the group level, taking into account unobserved heterogeneity by including participant fixed effects. The dependent variable in the associated regressions (see Table 4) captures the difference between the amount given to the dictator game recipient from the ingroup and the recipient from each of the three outgroups measured in euros, which yields three observations per individual. Our explanatory variable of main interest captures the identification preferences for the receiver's group, i.e. the group-specific WTA (measured in euros). The corresponding fixed-effects regressions show that stronger identification preferences with respect to the receiver's group are associated with larger amounts sent by a participant. Column (1) reveals that the amount by which the sender favors the ingroup receiver over a given outgroup receiver increases by 12.4 cents for every 1 euro increase in the stated WTA with respect to the outgroup receiver's group. In column (2) we add two dummy variables to control for outgroup characteristics (i.e. other football club and low performance).[20] These dummies' coefficients show statistically significantly higher discrimination levels for outgroup receivers from the other football club and no statistically significantly different behavior towards low performance groups. The regression results reveal that

[20]Column (2) of Table 4 includes two dummy variables to control for outgroup characteristics. *Outgroup – Other Club* indicates whether an outgroup stems from the other football club, while *Outgroup – Low Performance* takes on the value of 1 for outgroups of below median performance in the math task.

individual identification preferences still have a significant effect on discrimination decisions in allocation choices – even if we control for the exogenous group characteristics. This highlights the relevance of heterogeneous identification preferences as a relevant source of behavioral heterogeneity.

Result 3: Identification preferences explain ingroup-outgroup discrimination. *Individuals who more strongly prefer identifying with their initial group (who have an above-median average WTA) are more likely to discriminate against outgroups in allocation choices. The lesser a given participant prefers to identify with a particular group (the higher her WTA towards this outgroup), the less favorably does she treat an outgroup member from this group in the dictator game.*

3.2.2 Preferences for Identification and Allocation Choices: Between Outgroups

Our design allows for an additional complementary test of Result 3. We can check whether differences in the revealed preferences for identification among outgroups parallel differences in the allocation choices among outgroups.

Looking at the share of participants who discriminate in allocation choices between the three outgroups, we find that this share is significantly higher for individuals who also display differences in their identification with the three groups (see panel (b) of Figure 7). Out of these 75 participants, 61.3 percent allocate different amounts of money across at least two outgroups in the dictator game, while only 26.4 percent of the 53 individuals who state equal WTAs for the three outgroups do so. This difference is highly statistically significant ($p < 0.001$ in both a two-sided Fisher's exact test and Pearson-χ^2-test) and virtually unaffected once we control for socio-demographic factors in a regression. The estimated marginal effect of identification is 36.8 percentage points (column (3) of Table 3).

Again, we exploit the within-subject dimension of our experiment to investigate whether participants differing in identification preferences (WTA) with two specific outgroups discriminate between *exactly these* outgroups in the dictator game. We consider pairwise comparisons of two outgroups each, yielding three observations per individual in total.[21] Column (3) of Table 4 reports results from fixed-effects regressions, using the difference in WTAs between the respective outgroups as the explanatory variable. As dependent variable we use the difference in the amounts given to the recipients in the dictator game for the according pair of outgroups. Mirroring our previous results, differences in identification preferences are once again related to differences in discrimination in allocation decisions. If identification preferences regarding outgroup A are stronger than regarding B (implying a negative WTA difference), the payoff assigned in the dictator game to the member of outgroup A is higher. The *Identification Preference* coefficient in column (3) reveals that a 1 euro higher WTA difference between two outgroups increases dictator game discrimina-

[21] For each participant, we compare (1) the two outgroups from the other club, (2) the outgroup from the own club and the outgroup of the same color but other club, and (3) the outgroup from the own club and the outgroup of the other color and other club.

tion between the two groups by 9 cents. Heterogeneity with respect to identification preferences thus translates into heterogeneity with respect to allocation choices even among different outgroups.

Result 4: Identification preferences explain outgroup-outgroup discrimination. *Individuals whose identification preferences differ among outgroups are more likely to discriminate in their allocation decisions between outgroups. Differences in identification preferences between a particular pair of outgroups explain differences in the degree of discrimination between these outgroups at the within-subject level.*

3.3 Discussion and Pilot Study

The results presented thus far are in line with the conjecture that both social distance and social status shape identification preferences and that heterogeneity in these preferences is related to subsequent behavioral heterogeneity. We have demonstrated that (i) group identification matters, as participants are willing to forego a significant amount of money in order to remain a member of a particular group, that (ii) the structure of the participants' revealed identification preferences can be organized along social distance and social status, two key identity dimensions proposed by social identity theory, and that (iii) a weaker identification preference towards a certain group translates into harsher treatment.

We now discuss some alternative explanations and interpretations. Moreover, since our pilot study differed slightly from the main study, its conclusions allow us to consider (and rule out) some of these alternative interpretations. The pilot study consisted of the same five stages as the main experiment, but differed with respect to the following design features. First, we used university affiliation instead of the favorite football club for the social distance dimension. Participants' affiliation with one of two different public universities served as a first assignment rule to different groups. Second, in the pilot study, participants entered their group-specific WTAs in text boxes rather than by using sliders. Third, the pilot used experimental points instead of euros as currency. Fourth, the pilot study included four two-person dictator games selected from Bartling et al. (2009) to elicit group-specific social preferences. In these dictator games, participants' actions were limited to binary choices. Finally, the pilot contained examples instead of comprehension questions after the instructions. A more detailed discussion of the pilot study's design and results is provided in Appendix A.[22]

Elicitation Procedure

Irrespective of the sizable variation in the participants' stated $WTAs$ across groups (see Figure 3), one might argue that our measures of identification preferences might depend on the chosen

[22]Table 5 provides an overview of the key features and differences of the two experiments. In short, all of our main findings are in line with those from the main experiment: we find that identification matters (Result 1), social distance and a group's social status matter for identification (Result 2), and identification predicts group specific social preferences (Results 3 and 4).

elicitation procedure. In the pilot study, we made use of textboxes instead of scrollbars to elicit $WTAs$. For each outgroup, the participants simply typed in the minimum payoff difference for which they would be willing to change groups. There was no default value in the pilot (whereas the scrollbar was adjusted at 0 in the main experiment by default). Furthermore, with the textbox, the possibility that stating a negative WTA (i.e. expressing to prefer another group to the initial one even if this other group earns less money) was viable might have been less clear to the participants. In fact, the share of individuals who are purely money-oriented and do not care about group affiliation was smaller in the pilot (2.6 percent) than in the main experiment (26.6 percent). This suggests that the elicitation procedure chosen for the main experiment is the more conservative one. Most importantly, all results hold regardless of whether we focus on the main experiment or the pilot study which makes us confident that our findings are not driven by this particular feature of WTA elicitation.

Dictator Game Structure

We also probed the association between identification preferences and discrimination in the allocation decisions by varying the action space in the latter. The dictator game design in the main study involved an efficiency component, i.e. failing to give was a source of inefficiency. Starting with Tajfel et al. (1971), dictator games with an efficiency component have been commonly used in experiments in social psychology. However, in the pilot study, we used simpler versions of the dictator game and limited participants' actions to four binary decisions (taken from Bartling et al. 2009). Whereas this setup might cloud heterogeneity in discrimination behavior for those participants who would like to discriminate at an intermediate level between the two binary options (which is why we used the continuous dictator game in the main experiment), it is instructive to compare the results from the two approaches. Indeed, this design change affects discrimination in the dictator game both at the intensive and extensive margin.

Whereas in the main study, 46.9% of the participants discriminated against at least one outgroup in the dictator game (ingroup-outgroup discrimination), this share is slightly lower in the binary dictator games (41.7%). Discrimination between outgroups by a given individual also decreases – especially among those participants who do not discriminate between outgroups with respect to WTA. In the main study, 26.4% of this subgroup discriminate among outgroups in the dictator game, while only 6.6% do so in the pilot study (see Figures 7 and A.4). Among those who discriminate among outgroups with respect to WTA, the difference between the shares of dictator game discriminators is smaller (49.6% in the pilot study compared to 61.3% in the main experiment). These results suggest that the continuous dictator game has its advantages in allowing participants an "intermediate level" of discrimination in allocation choices. We used the continuous dictator game in the main experiment because the expected larger within-subject variation additionally allows us to include participant fixed effects in our regression analyses, which absorb any unobserved

heterogeneity that might drive allocation decisions.[23] Overall, the results from the pilot and the main experiment are very consistent. We therefore conclude that the chosen dictator game structures do not drive our main findings.

Role and Interpretation of Social Distance

The pilot study also helps to understand the role of social distance. In the pilot study, we chose an emotionally less charged characteristic than football club affiliation to induce differences in social distance: participants' university affiliation. Unlike in the US, where university affiliation is arguably a common source of pride, the emotional attachment is much lower in the German system. One likely reason is the fact that college sports and intercollegiate competition, which fuels rivalries across schools, is nearly non-existent in Germany. Indeed, the relative importance of social distance compared to the social status dimension turns out to be smaller in the pilot than in our main experiment. The fact that we observe significant identification preferences with respect to social distance in two separate experimental studies and different characteristics (football club as well as university affiliation) supports the claim that social distance plays an important role in shaping identification preferences. Further, the relative effect size across the two experiments is also in line with the relative strength of the induced social distance.

Role and Interpretation of Social Status

One could question our interpretation of differences in WTA^{Status} as revealing differences in identification preferences with respect to status. In principle, a preference for belonging to a high performance group could also stem from social status concerns independent of group affiliations. However, in our particular experimental setup, this concern appears to be unfounded. The individual status an individual holds with respect to math ability is not affected by switching groups. After the group assignment phase, each individual receives feedback on whether the individual math performance was above or below the median. By switching groups, this individual performance and hence individual status does not change – only the status of the group to which the participant is assigned is higher or lower than the status of the initial group. In addition, if the differences in WTAs that we interpret as revealed identification preferences would in fact not be related to identification preferences, one would need to find an alternative mechanism that explains its association with subsequent discrimination behavior.

Further, one might argue that within-group status considerations might also play a role in our setting. Choosing a high performing group might enhance status, but it might at the same time yield negative feelings stemming from within-group comparisons. In that sense, being a big fish in a small pond might be better than being a small fish in a big pond. As the participants in our experiment neither received feedback about their rank within their group nor about their absolute performance in the mathematics task (and the other participants' performance), there is actually no

[23] In the pilot study, using fixed effects leads to a substantial reduction of the sample as there is a significant number of individuals who do not discriminate between outgroups due to the binary nature of the dictator game decision.

scope for such a mechanism. From an empirical perspective, our results indicate that our implicit assumption of participants taking an intergroup perspective when considering social status seems warranted: If the small pond would be overly attractive, the WTA^{Status} effect should go into the opposite direction than it actually does. For future research, it will be worthwhile investigating the potentially different effects of individual and group status in a similar setting. To do so, it would be necessary to provide the participants with information about their own relative performance compared to the other group members.

Interpreting WTAs as Revealed Identification Preferences

A key feature of our design is its ability to interpret stated WTAs as reflecting pure identification preferences. This ability hinges upon stripping away the consequences of group reassignment of any potential alternative motive other than identity. For this reason, we made the last round of the experiment – the second chat phase which is potentially carried out in the new group – anonymous and non-incentivized and explicitly informed participants about this. Despite this design feature, one might argue that the second chat phase could still induce motives for group-reassignment other than identity. We tackle this alternative explanation by re-running our analysis for the subset of 102 participants who stated in the post-experimental questionnaire that the second chat phase had no or only low relevance. For these participants, average WTA is smaller than in the full sample, but still amounts to 194.45 cents, i.e. 48.6% of the expected earnings from that stage, and highly significantly different from 0 ($p < 0.0001$ in a two-sided t-test). The impact of social distance and social status is also slightly reduced in this subsample. Average $WTA^{Distance}$ is 26.78 cents ($p = 0.1924$) compared to 36.72 cents in the full sample, while average WTA^{Status} equals 54.10 cents ($p = 0.02$) compared to 71.19 cents in the full sample.

4 Conclusion

In this paper we develop a novel experimental protocol measuring individual preferences for different social identities using a revealed preference approach. Applying our method, we investigate the structure of identification preferences and test whether they are related to heterogeneity in discriminatory behavior towards outgroups.

We find that individuals display economically meaningful and substantially heterogeneous preferences for identification and are willing to forego significant monetary payments in order to manipulate their group membership. In line with the predictions from social identity theory, participants in our experiment prefer groups that have a higher social status and to which they have a smaller social distance. Further, we find that identification preferences matter for behavioral heterogeneity: participants with stronger identification preferences towards their initial ingroup also discriminate more strongly between this ingroup and other groups in allocation choices. Our experimental design additionally allows us to analyze the within-subject dimension of allocation choices. Here, we find

a strong connection between the within-subject heterogeneity in identification preferences and the within-subject heterogeneity in outgroup discrimination. The results from our main experiment are supported by the results from a pilot study which used a slightly different experimental design.

From an applied perspective, our paper provides a novel angle to better understand when and how common group membership shapes behavior and when it does not. For example, our results suggest that the effectiveness of common social identities in fostering cooperation within organizations depends on the underlying identification preferences of the affected individuals.[24] Hence, triggering potentially beneficial behavioral effects of social identity can be achieved by shaping the salient characteristics of the particular group such that they match the respective identification preferences of the relevant individuals more closely. Reducing the perceived social distance from and increasing the perceived social status of a group may improve group interactions and cooperation.

The notion of people having preferences for different social identities brought forward in this paper almost necessarily makes one wonder how individuals express these preferences by actively choosing their identity through identification. Such choices would have far-reaching and non-trivial consequences, as by choosing different social identities individuals would also implicitly affect their future behavior. So far, these aspects have largely been neglected in the experimental economic literature, despite being explored in the theoretical literature (Akerlof and Kranton 2000, Shayo 2009, Bernard et al. 2016, Akerlof 2017, Gennaioli and Tabellini 2019) and in the analysis of field data (Atkin et al. 2018, Jia and Persson 2019). Against this background, it seems a promising avenue for future research to enhance the experimental protocol introduced in this paper in order to also explicitly analyze identity as a choice and its behavioral consequences.

[24] For example, Carell et al. (2013) find that some individuals tend to avoid interacting with certain peers with whom they were intended to interact by organizational design.

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Tables and Figures

Tables

Table 1: Summary Statistics – Identification Preferences

	Mean	Std. Dev.	Median	Lower Quart.	Upper Quart.	Min	Max
$\overline{WTA}$	221.51***	254.65	142.44	0.00	373.78	−464.44	800.00
$WTA_{d,-s}$	206.36***	277.68	102.67	0.00	400.00	−568.00	800.00
$WTA_{-d,s}$	215.08***	267.57	100.67	0.00	352.00	−254.67	800.00
$WTA_{-d,-s}$	243.08***	305.54	200.00	0.00	420.00	−800.00	800.00
$WTA^{Distance}$	36.72**	193.56	0.00	0.00	31.33	−1600.00	548.00
WTA^{Status}	71.19***	237.29	0.00	0.00	114.00	−1600.00	845.33

Notes: WTAs measured in cents. $\overline{WTA}$ is the average stated minimal difference in monetary payoffs between one's own group and all three other groups for which a group reassignment would be accepted. $WTA_{d,-s}$ is the stated difference in monetary payoffs between one's own group and the group from the same football club and other math performance for which reassignment to that group would be accepted. $WTA_{-d,s}$ is the stated difference in monetary payoffs between one's own group and the group from the other football club and the same math performance for which reassignment to that group would be accepted. $WTA_{-d,-s}$ is the stated difference in monetary payoffs between one's own group and the group from the other football club and other math performance for which reassignment to that group would be accepted. $WTA^{Distance}$ measures the difference in the stated willingness-to-accept between the group of the other status from the other football club and the group of the other status from the same football club, i.e. $WTA^{Distance} = WTA_{-d,-s} - WTA_{d,-s}$. WTA^{Status} measures the difference in the stated willingness-to-accept between the group of low performance from the other football club and the group of high performance from the other football club, i.e. $WTA^{Status} = WTA_{-d,\text{low math performance}} - WTA_{-d,\text{high math performance}}$.

* Significant at the 10 percent level (t-test),
** significant at the 5 percent level,
*** significant at the 1 percent level.

Table 2: Relation between WTA and Social Distance/Social Status

	WTA	WTA	WTA
	(1)	(2)	(3)
Distance	27.997**	28.025**	27.557**
	(13.668)	(13.707)	(13.764)
Status	−84.444 ***	−84.905 ***	−77.405 ***
	(22.704)	(21.586)	(17.338)
Age		3.784	
		(6.599)	
Male		77.089	
		(46.734)	
Undergrad		55.478	
		(49.517)	
Constant	243.309***	70.431	240.229***
	(27.512)	(176.773)	(11.198)
Fixed Effects	No	No	Yes
Observations	384	384	384
R^2	0.023	0.054	0.09

Notes: Coefficient estimates of pooled OLS (columns 1 and 2) and fixed effects regressions (column 3) with clustered standard errors at the individual level in parentheses. The dependent variable is a participant's WTA regarding a specific outgroup. Each participant enters the data three times ($WTA_{-d,s}$, $WTA_{d,-s}$, and $WTA_{-d,-s}$). Distance is a dummy variable that takes the value of 1 if the outgroup stems from the other football club and is 0 otherwise. Status is a dummy variable that takes the value of 1 if the outgroup has a better math performance and is 0 otherwise. Age is measured in years, male is a dummy variable which is equal to 1 for men, and undergrad is equal to 1 for bachelor students, and 0 otherwise. For the fixed effects regression, R^2 reports the within-R^2 value.

* Significant at the 10 percent level,

** significant at the 5 percent level,

*** significant at the 1 percent level.

Table 3: Identification and Discrimination in Allocation Decisions against Outgroups

	Ingroup-Outgroup Discrimination		Outgroup-Outgroup Discrimination
	(1)	(2)	(3)
Identification Preference			
$WTA >$ Median Dummy	0.191*		
	(0.099)		
Continuous WTA		0.013	
		(0.021)	
WTA Discrimination Dummy			0.368***
			(0.101)
Age	0.010	0.011	0.003
	(0.010)	(0.010)	(0.007)
Male	0.014	0.047	0.043
	(0.089)	(0.079)	(0.100)
Undergrad	−0.068	−0.051	−0.211
	(0.110)	(0.108)	(0.106)
Observations	128	128	128
Pseudo R^2	0.037	0.016	0.117

Notes: Marginal effects at the mean of logistic regressions with clustered standard errors at the group level in parentheses. The dependent variable is discrimination between different groups in the dictator game. In columns (1) and (2), the dependent variable is equal to 1 if members of at least one of the three outgroups were given a lower payoff than members of the own group, and 0 otherwise. In column (3), the dependent variable is equal to 1 if members of the three outgroups received different payoffs, and 0 otherwise. In column (1), the $WTA >$ Median Dummy is 1 if the average willingness-to-accept over all three outgroups exceeds the median, and 0 otherwise. In column (2), we use the average stated willingness-to-accept measured in euros over all three outgroups as the continuous measure of Identification Preferences. In column (3), the WTA Discrimination Dummy is equal to 1 if the willingness-to-accept varies across the three outgroups and 0 otherwise. Age is measured in years, male is a dummy variable which is equal to 1 for men, and undergrad is equal to 1 for bachelor students, and 0 otherwise.

* Significant at the 10 percent level,

** significant at the 5 percent level,

*** significant at the 1 percent level.

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[25]We report marginal effects at the mean. All results, interpretations, and significance levels hold for average marginal effects, as well.

Table 4: Identification and Discrimination in Allocation Decisions across Outgroups

	Outgroup Discrimination in Allocation Decisions		
	Ingroup-Outgroup		Outgroup-Outgroup
	No Controls	Outgroup characteristics	No Controls
	(1)	(2)	(3)
Identification Preference	0.124^{**}	0.121^{***}	-0.09^{***}
	(0.047)	(0.044)	(0.033)
Outgroup – Other Club		0.496^{***}	
		(0.136)	
Outgroup – Low Performance		-0.115	
		(0.093)	
Fixed Effects	Yes	Yes	Yes
Observations	384	384	384
R^2	0.036	0.121	0.03

Notes: Coefficient estimates of fixed-effects regressions with clustered standard errors at the individual level in parentheses. In columns (1) & (2), the dependent variable is the difference between the amount given to the dictator game recipient from the ingroup and the recipient from each of the three outgroups (measured in euros). In column (3), the dependent variable is equal to the difference in the amounts given to the recipient in the dictator game for a given outgroup pair (measured in euros). Identification Preference is measured as the stated WTA for the particular outgroup in euros in columns (1) & (2). In column (3), Identification Preference is measured as the difference in WTAs between the respective outgroups. Outgroup – Other Club is equal to 1 if the outgroup is from the other football club, and 0 otherwise. Outgroup – Low Performance is equal to 1 if the outgroup had a low performance in the math task, and 0 otherwise. R^2 report within-R^2 values.

* Significant at the 10 percent level,

** significant at the 5 percent level,

*** significant at the 1 percent level.

Table 5: Comparison of the Experimental Designs

	Pilot Study	Main Experiment
Laboratories	Frankfurt & Trier	Frankfurt & Cologne
Participants	192	128
Stage 1: Group Assignment		
Social Distance	University	Football Club
Social Status	Performance Math Task	
Stage 3: WTA Elicitation		
Elicitation Procedure	Text Box	Scrollbar
Control Questions	Examples	Optimal Strategies
Stage 4: Allocation Decisions	4 Binary Dictator Games	1 Continuous Dictator Game
Stage 5: No Payoff Consequences	Implicit	Explicit

Figures

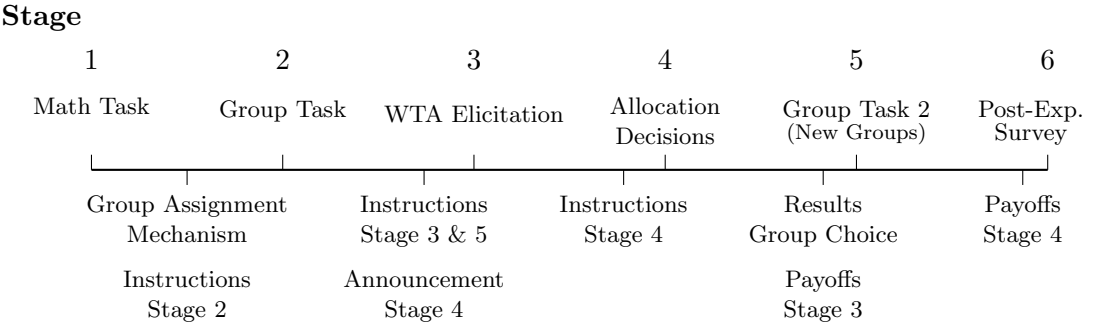

Figure 1: Timeline of the Experiment

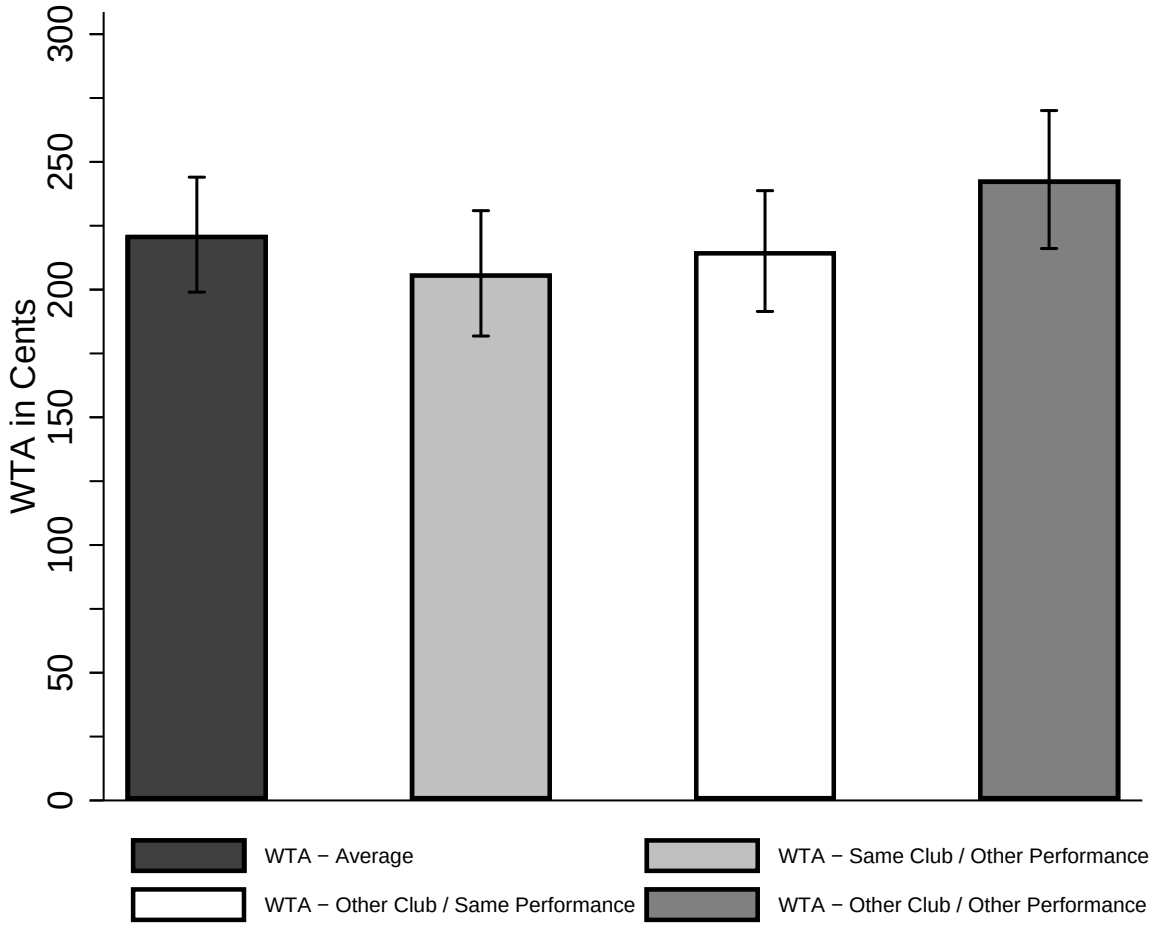

Figure 2: Identification Preferences

Notes: The vertical axis indicates the WTA in cents, the bars depict the average $WTA \pm$ SE over all groups (dark grey bar) and over the three different outgroups.

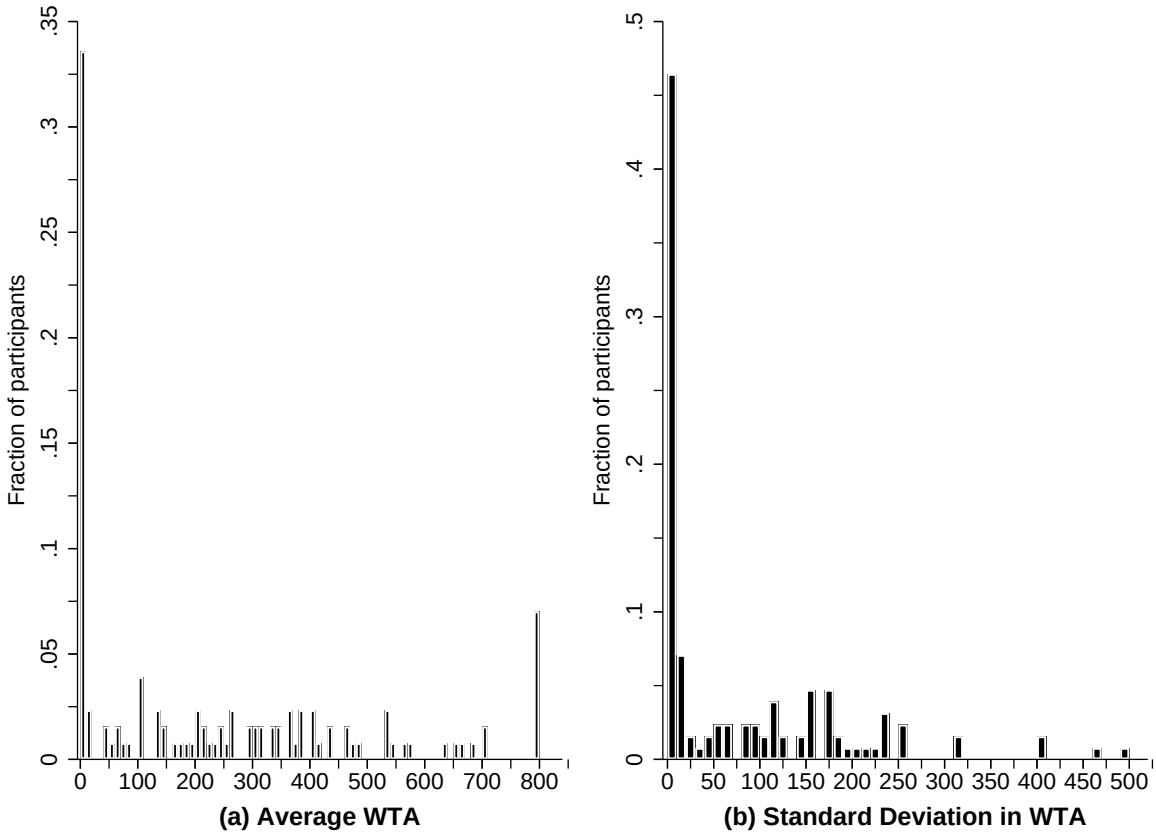

Figure 3: WTA: Average and Standard Deviation

Notes: Panel (a) presents the histogram of participants' average WTA over the three outgroups, panel (b) shows the histogram of the within-participant WTA standard deviation across outgroups.

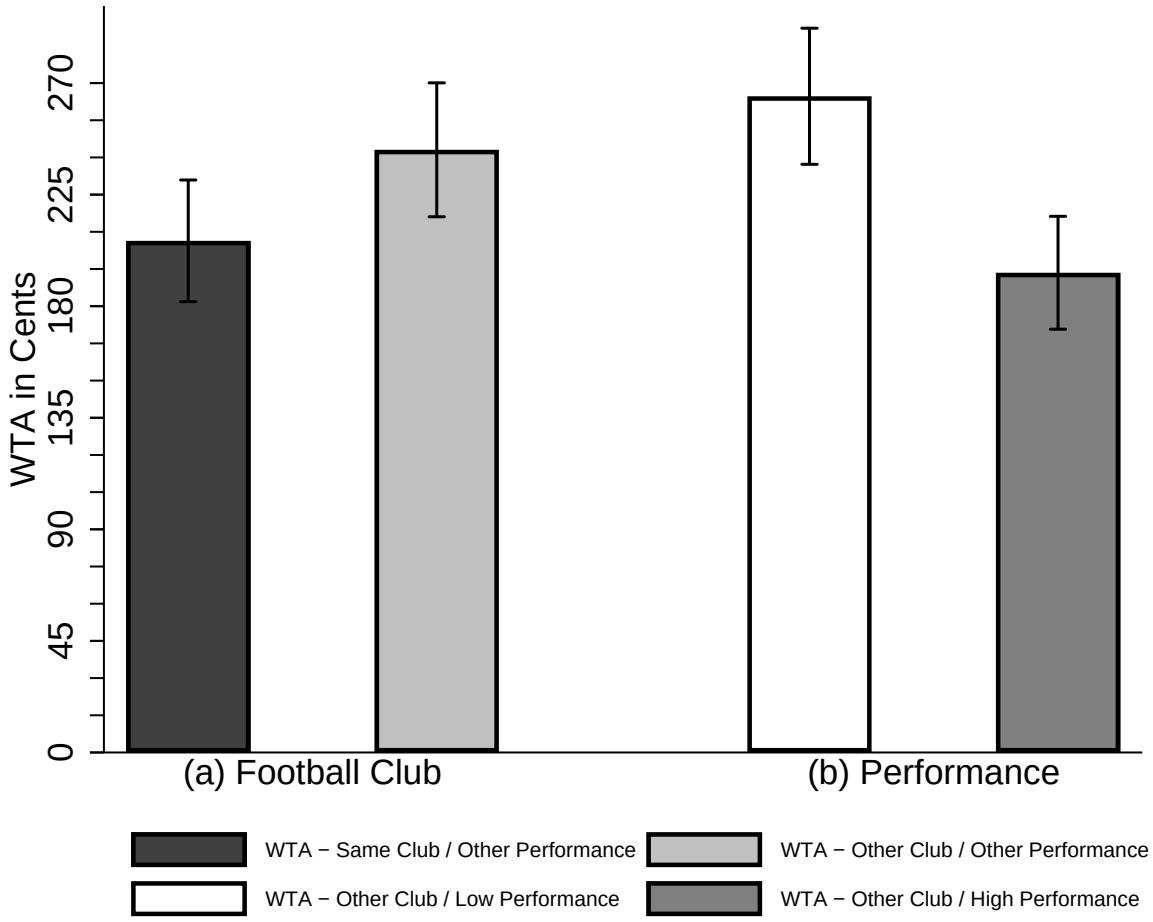

Figure 4: Identification Preferences: Social Distance and Social Status

Notes: The vertical axis indicates the WTA in cents. The bars in panel (a) represent the social distance dimension (by varying outgroup football club affiliation and holding outgroup performance constant) ± SEs, the bars in panel (b) represent the social status dimension (by varying outgroup performance and holding outgroup football club affiliation constant) ± SEs.

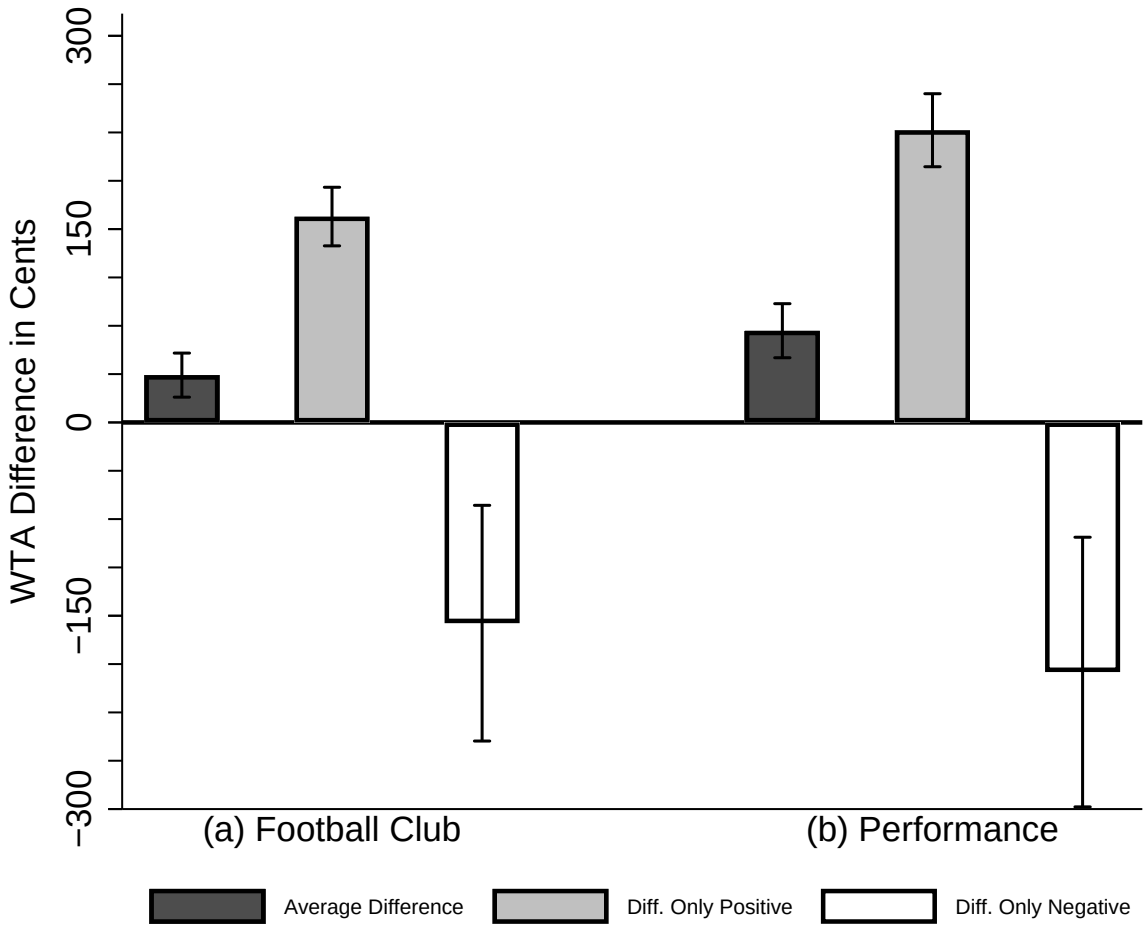

Figure 5: Identification Preferences: Heterogeneity

Notes: The vertical axis indicates the WTA difference in cents in (a) the football club dimension and (b) the performance dimension. The light grey (white) bars show the averages for the subsamples of participants with positive (negative) WTA differences ± SE. The dark grey bars refer to the full sample ± SE.

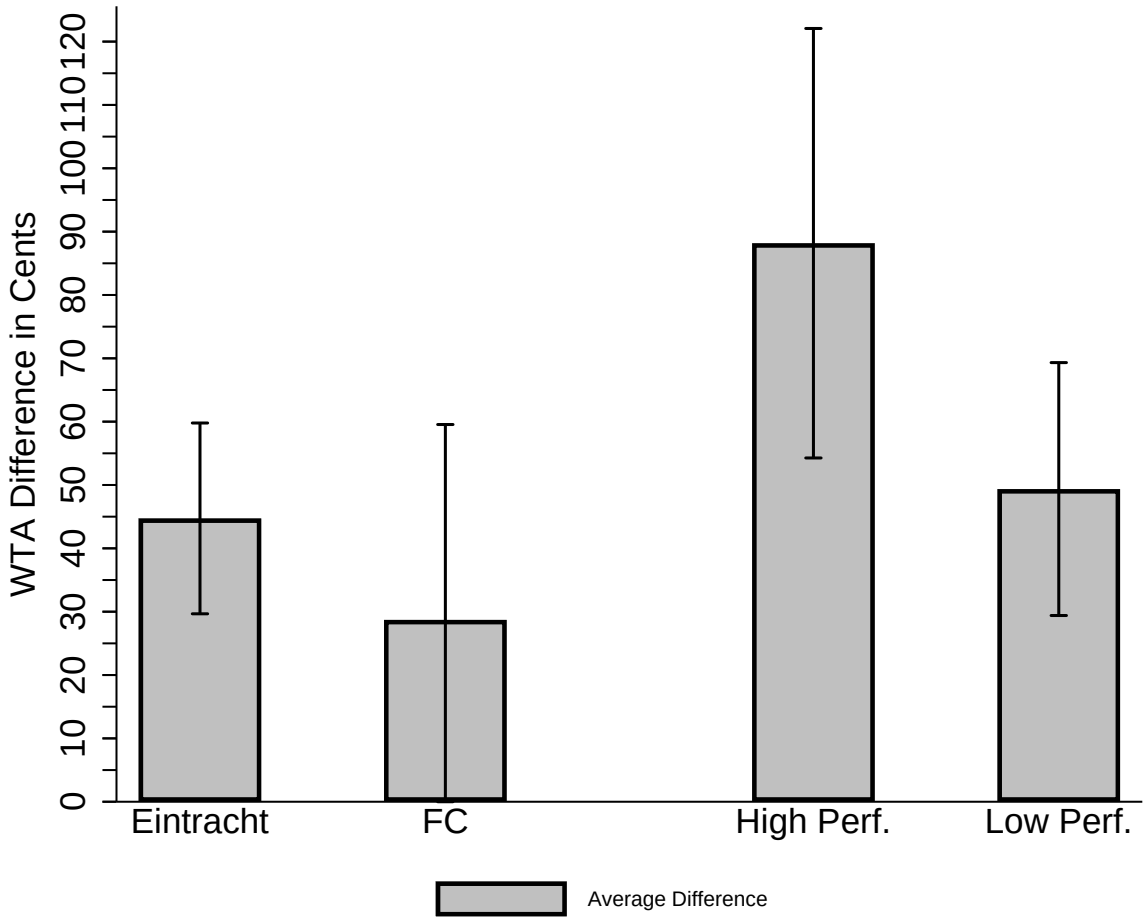

Figure 6: Identification Preferences: Heterogeneity in Social Distance and Social Status

Notes: The vertical axis indicates the WTA difference in cents. Samples are split by football clubs (first two bars) and by math performance (bars three and four). The first two bars represent $WTA^{Distance} \pm$ SEs for the two football club subsamples, while the last two bars report $WTA^{Status} \pm$ SEs for the high and low performance groups.

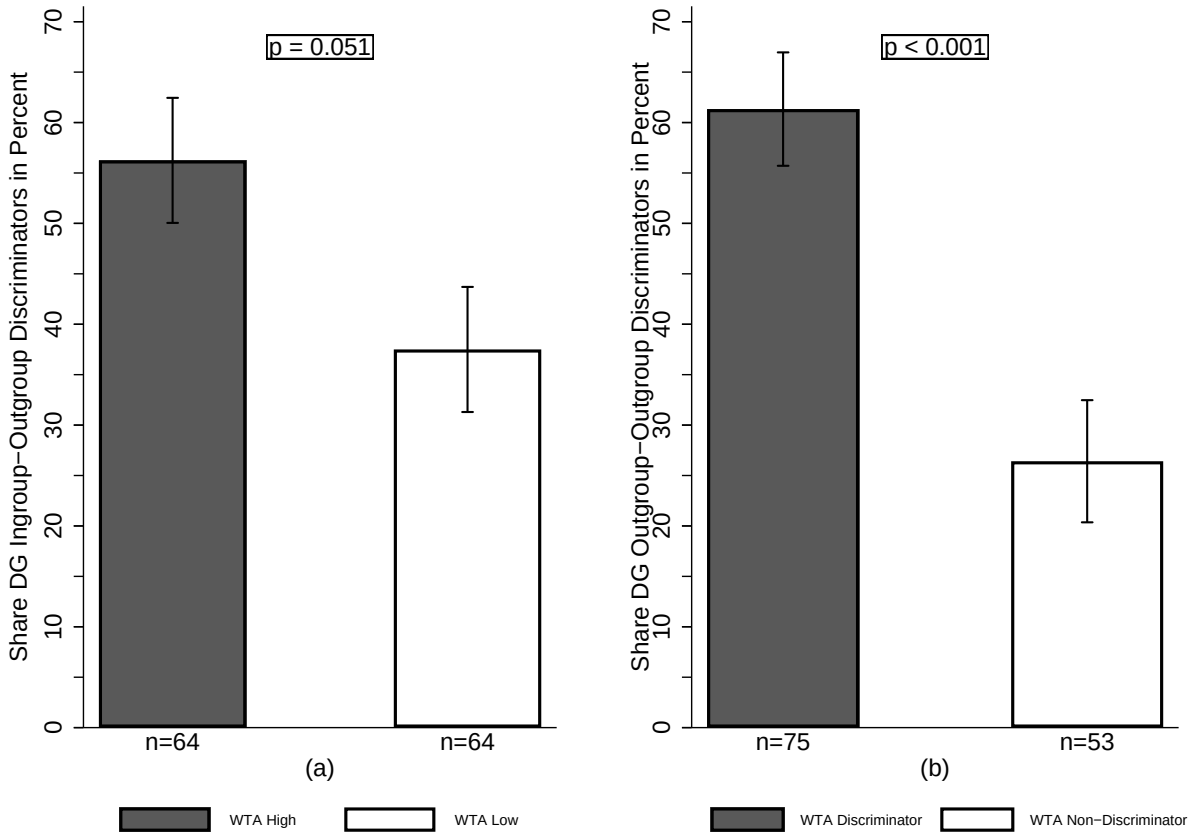

Figure 7: Discrimination in Allocation Decisions: the Role of Identification Preferences

Notes: In Panel (a), the vertical axis indicates the share of participants who discriminate between the own group and any of the three outgroups in the dictator game. The sample is split by participants' average WTA (grey bar: above median, white bar: below median). In Panel (b), the vertical axis indicates the share of participants who discriminate across the three outgroups in the dictator game. The grey bar represents the participants who discriminate between outgroups with respect to their WTA, while the white bar represents those whose WTA does not differ between outgroups. All bars ± SE. p-values from two-sided Fisher's exact tests.

For Online Publication

ONLINE APPENDIX: The Structure and Behavioral Effects of Revealed Social Identity Preferences

Florian Hett, Markus Kröll, and Mario Mechtel

Appendix A. Pilot Study

I. Experimental Design

Our pilot study consisted of the same five stages as the main experiment. We assigned groups based on two characteristics in the first stage and used three unincentivized picture puzzles and a chat phase for group enhancement through joint activity. We then used the same revealed preference approach to elicit identification preferences in stage 3 and measured identity-contingent social preferences with a simple dictator game in stage 4. The experiment was also capped with a second unincentivized round of picture puzzles after payoff-realizations as well as group changes were revealed. While the pilot thus fully matches the main experiment in terms of the underlying experimental strategy and design, there are some important procedural differences which have in parts already been discussed in Section 3.3 and which we will elaborate on in more detail here.

Group Assignment Characteristics – Even though our main experiment was successful in spanning an identity space which reflected social distance and social status, there exist other categories than football club affiliation which potentially also carry social distance. In the pilot, we used university affiliation instead of the favorite football club for the social distance dimension. Participants' affiliation with one of two different public universities served as a first assignment rule to different groups. Identification with one's *alma mater* is less salient in Germany than for example the US, where university affiliation is more culturally ingrained and reinforced by intercollegiate competition.[26] We therefore expected the role of social distance to be less pronounced than we later did in the main experiment.

We conducted the pilot simultaneously at two universities. Participants were part of the subject pools of the Frankfurt Laboratory for Experimental Economic Research (FLEX) and the Trier Laboratory for Experimental Economics (TREX). For the social status dimension, we used the same math task as in the main experiment and assigned participants in high or low performance groups

[26]Note that the overwhelming majority of participants perceive the reputation of the two universities to be about equal. This suggests that there is no status difference between universities.

contingent on their performance in this task.

Elication Procedure and Experimental Currency – In the pilot study, we did not use euros as currency, but experimental points. At stage 3, each of the four groups was attached a random point value $\pi_{d,s}, d \in \{\text{University A, University B}\}, s \in \{\text{high performance, low performance}\}$, drawn from a uniform distribution in the interval $[200, 800]$. Participants were paid 1 euro per 100 points earned in the experiment. Contrary to the sliders used in the main experiment, we used plain text boxes to elicit the WTAs in our pilot study.

One might fear that the plain text boxes could artificially inflate the WTAs because participants might have felt compelled to add a positive number. Additionally, although the experimental setting was very transparent, participants might not have been aware that entering negative values was viable. Indeed, we found that only a very small fraction of participants stated WTAs of 0 and did not care about group affiliation (2.6 percent). Nobody entered a negative number. In the main experiment, we therefore replaced the text boxes with the scrollbars ranging from -8 euro to +8 euro. This highlighted the possibility that stating a negative WTA (i.e. expressing to prefer another group to the initial one even if this group's payoff is lower) was possible and allowed us to specify a default, which we set at 0. The pilot study is, thus, an interesting setting to test for the robustness of our findings when varying an important design feature.

Dictator Games – The main experiment makes use of a continuous dictator game with an efficiency component. A continuous dictator game with a multiplier to generate the efficiency effects (see Section 2.2) complicates decision-making compared to a standard dictator game. In the pilot study, we limited participants' actions to binary decisions. Participants took part in four two-person dictator games selected from Bartling et al. (2009) to elicit group-specific social preferences (see Table A.1). As in the main experiment, we used the strategy-method to collect decisions for all groups. Every individual had to choose an allocation between herself and another member of each of the three other groups as well as between herself and a member of her own group.

Table A.1: Allocation Games used in the Pilot Study

Game	Choice
Prosocial	(400, 400) vs. (400, 240)
Costly Prosocial	(400, 400) vs. (640, 160)
Envy	(400, 400) vs. (400, 720)
Costly Envy	(400, 400) vs. (440, 760)

Notes: The table summarizes the alternative allocations in the four binary allocation games "prosocial", "costly prosocial", "envy", and "costly envy". The first number in each bracket is the dictator's payoff, the second number is the receiver's payoff.

The main findings are the same in the pilot study and the main experiment. The binary dictator games, however, potentially cloud heterogeneity in discrimination behavior for those participants who would like to discriminate at an intermediate level between the two binary options. We therefore chose to use the continuous dictator games in the main experiment.

Instructions and Control Questions – We altered the control questions in the main experiment in order to make the payoffs in the third stage even more salient and ensure that all participants understood the payoff consequences of their decisions. In the pilot study, we provided the participants with examples and asked them what would happen under the described circumstances. In the main experiment, we opted for comprehension questions which focused on the optimal strategy given a certain objective. More specifically, every individual had to state the optimal strategy for three types of individuals: (i) an individual who would like to remain with her initial group, (ii) one who would like to leave her initial group, and (iii) one who does not care about group membership and wants to maximize her own payoffs.

Additionally, we rephrased the description of the second round of picture puzzles and group chats in the main experiment. In the pilot, we stated that this second phase would be fully identical to the first one aside from the potential new group compositions. This implies that this stage has no payoff consequences. However, one might argue that participants still had some strategic considerations when making their identification choices. We therefore added the following line to the instructions of stage 3 in the main experiment: "As in the previous round, you will **not** be paid for a correct answer."

II. Results

We ran the pilot study with 192 participants. Table 5 provides an overview of the key features and differences to the main experiment as described above. Within this section, we describe the results of the pilot in detail and relate them to our findings presented in the main part of the paper.

Participants' average WTA amounts to 182.22 points in the pilot study, which equals 36.44% of expected earnings at the group selection stage (see Table A.2 and Figure A.1). The WTA average over all participants is significantly different from 0 (t-test: $p < 0.0001$). The same holds for the average values of outgroup-specific WTAs. The highest average WTA (201.24 points) results for the outgroup of different performance and the other university, while average WTA is the lowest for the outgroup of the same performance and the other university (159.30 points). This latter finding is a first indicator for a less important role of the social distance (i.e. university) dimension in the pilot study. While the absolute value of average WTA in the main experiment is higher than in our pilot study, we should take into account that a group's potential WTA ranges between 0 and 8 euros in the main experiment instead of 0 and 600 points in the pilot. In contrast to the main experiment, no participant states a negative WTA average for all three outgroups (2 participants in the main experiment). The share of participants for whom groups do not matter is larger in the main experiment (26.6% with an average WTA of 0) than in the pilot, where only 15 of 192 participants choose a WTA average of 0 or 1. 26 percent of the participants even state WTAs larger than 250, which corresponds to 50 percent of expected earnings from the group selection stage in the pilot study. Combining these results supports the findings that groups matter and that there is much heterogeneity with respect to the perceived importance of groups. Taken together, Result 1 is, thus, confirmed by the pilot study.

Result 2 focuses on the structure of identification preferences (see Figure A.3). As in the main experiment, we compare the WTA regarding two outgroups of the same math performance but different universities to identify the role of social distance. On average, the WTA difference amounts to 15.4 points and is statistically significant (two-sided t-test: $p < 0.005$). The first part of Result 2 is, thus, confirmed. The same holds true for the second part: social status matters for identification. On average, participants have a 48.2 points higher WTA regarding the outgroup from the other university that performed worse in the math task. While the social distance effect amounts to around 32% of the social status effect in the pilot study, its relative importance is substantially higher in the main experiment (roughly 52%).

Results 3 and 4 establish that identification preferences are related to ingroup-outgroup discrimination and outgroup-outgroup discrimination. The data from the pilot study confirm that participants who show stronger identification preferences regarding their initial group are significantly more likely to discriminate against outgroups. This is true both for the replication of Figure 7 (see Figure A.4) and a logistic regression where the explanatory variable of main interest is a dummy

that equals 1 if a participant's average WTA exceeds the median value (column (1) of Table A.3). The average marginal effect equals 0.16 and is, thus, very similar to that in column (1) of Table 3. Applying a participant's WTA average as continuous measure for identification preferences yields a positive and also statistically significant marginal effect in the pilot study (column (2) of Table A.3). The probability of discrimination against at least one outgroup in the allocation games rises by 7.2 percentage points for every 100 point increase in the average WTA.

This relation holds not only at the aggregate level but also for specific outgroups. In the flavor of Table 4, Table A.4 presents results of a logistic regression considering discrimination against a particular outgroup k in at least one of the four dictator games as the dependent variable. Our explanatory variable of main interest aims to measure identification with the receiver's group. It equals the outgroup-specific WTA. As the binary version of the dictator games utilized in the pilot study does not allow for the inclusion of participant fixed effects, we add control variables available at the individual level. The estimations strongly support the results from Table 4: the stronger the identification preferences regarding the receiver's group, the larger is the amount sent by a participant. This result is independent of whether we control for outgroup characteristics (i.e. other university and low performance) or not and whether we additionally include individual control variables or not. Result 3 is, thus, supported by the pilot study.

Our finding that WTA discrimination across outgroups relates to discrimination in allocation choices across outgroups (Result 4) is also supported by the pilot study. As can be seen from Figure A.4, the share of outgroup-outgroup allocation discriminators is significantly larger among those participants who also discriminate across two particular outgroups with respect to WTA in the flavour of Figure 7. This result also holds for the pilot study when introducing additional controls (as in column (3) of Table A.3). The marginal effect of the WTA dummy which captures a WTA difference between outgroups is 0.430 and statistically significant at the 1%-level. Furthermore, the result is confirmed when focusing on the group-level (as in columns (4) and (5) of Table A.4).

Overall, the pilot study supports the results from our main experiment. We find that identification preferences matter in general (Result 1), and in particular with respect to a group's social distance and social status (Result 2), and that identification preferences predict group specific social preferences (Results 3 and 4). As expected, the role of social distance was smaller when referring to universities rather than football clubs.

III. Tables and Figures

Table A.2: Summary Statistics – Identification Preferences – Pilot Study

	Mean	Std. Dev.	Median	Lower Quart.	Upper Quart.	Min	Max
$\overline{WTA}$	182.22***	128.85	175.00	86.67	263.33	0.00	600.00
$WTA_{d,-s}$	186.11***	141.25	200.00	100.00	280.00	0.00	600.00
$WTA_{-d,s}$	159.30***	133.77	150.00	50.00	200.00	0.00	600.00
$WTA_{-d,-s}$	201.24***	149.29	200.00	100.00	300.00	0.00	600.00
$WTA^{Distance}$	15.14***	64.04	0.00	0.00	12.50	−211.00	300.00
WTA^{Status}	48.20***	116.73	0.00	0.00	100.00	−200.00	600.00

Notes: WTA is measured in experimental points. $\overline{WTA}$ is the average stated minimal difference in monetary payoffs between one's own group and all three other groups for which a group reassignment would be accepted. $WTA_{d,-s}$ is the stated difference in monetary payoffs between one's own group and the group from the same university and other math performance for which reassignment to that group would be accepted. $WTA_{-d,s}$ is the stated difference in monetary payoffs between one's own group and the group from the other university and the same math performance for which reassignment to that group would be accepted. $WTA_{-d,-s}$ is the stated difference in monetary payoffs between one's own group and the group from the other university and other math performance for which reassignment to that group would be accepted. $WTA^{Distance}$ measures the difference in the stated willingness-to accept between the group of the other status from the other university and the group of the other status from the same university, i.e. $WTA^{Distance} = WTA_{-d,-s} - WTA_{d,-s}$. WTA^{Status} measures the difference in the stated willingness-to accept between the group of low performance from the other university and the group of high performance from the other university, i.e. $WTA^{Status} = WTA_{-d,\text{low math performance}} - WTA_{-d,\text{high math performance}}$.

* Significant at the 10 percent level (t-test),
** significant at the 5 percent level,
*** significant at the 1 percent level.

Table A.3: Identification and Discrimination in Allocation Decisions against Outgroups – Pilot Study

	Ingroup-Outgroup Discrimination		Outgroup-Outgroup Discrimination
	(1)	(2)	(3)
Identification Preference			
$WTA >$ Median Dummy	0.160^{**}		
	(0.065)		
Continuous WTA		0.072^{**}	
		(0.029)	
WTA Discrimination Dummy			0.430^{***}
			(0.056)
Age	0.000	0.000	0.009
	(0.011)	(0.012)	(0.007)
Male	-0.160^{**}	-0.169^{**}	-0.026
	(0.071)	(0.070)	(0.067)
Undergrad	-0.013	-0.005	-0.059
	(0.089)	(0.089)	(0.072)
Observations	192	192	192
Pseudo R^2	0.036	0.041	0.167

Notes: Marginal effects at the mean of logistic regressions with clustered standard errors at the group level in parentheses. The dependent variable is discrimination between different groups in one of the four allocation games. In columns (1) and (2), the dependent variable is equal to 1 if members of at least one of the three outgroups were given a lower payoff than members of the own group, and 0 otherwise. In column (3), the dependent variable is equal to 1 if members of the three outgroups received different payoffs, and 0 otherwise. In column (1), the $WTA >$ Median Dummy is 1 if the average willingness-to-accept over all three outgroups exceeds the median, and 0 otherwise. In column (2), we use the average stated willingness-to-accept in units of 100 experimental points over all three outgroups as the continuous measure of Identification Preferences. In column (3), the Identification Preference Dummy is equal to 1 if the willingness-to-accept varies across the three outgroups and 0 otherwise. Age is measured in years, male is a dummy variable which is equal to 1 for men, and undergrad is equal to 1 for bachelor students, and 0 otherwise.

* Significant at the 10 percent level,

** significant at the 5 percent level,

*** significant at the 1 percent level.

Table A.4: Identification and Discrimination in Allocation Decisions across Outgroups – Pilot Study

	Outgroup Discrimination in Allocation Decisions				
	Ingroup-Outgroup			Outgroup-Outgroup	
	No Controls	Outgroup characteristics	Controls	No Controls	Controls
	(1)	(2)	(3)	(4)	(5)
Identification Preference	0.053***	0.054***	0.061**	0.089***	0.085***
	(0.020)	(0.020)	(0.021)	(0.015)	(0.015)
Outgroup – Other Uni		0.022	0.022		
		(0.025)	(0.026)		
Outgroup – Low Performance		−0.008	0.002		
		(0.034)	(0.034)		
Controls	No	No	Yes	No	Yes
Observations	576	576	576	576	576
Pseudo R^2	0.021	0.021	0.051	0.126	0.137

Notes: Marginal effects at the mean of logistic regressions with clustered standard errors at the individual level in parentheses. In columns (1) – (3), the dependent variable is discrimination in allocation choices between one's own group and each of the three outgroups. It is equal to 1, if the member of the own group is awarded a higher payoff compared to the member of the respective outgroup in one of the four allocation games, and 0 otherwise. In column (4) & (5), the dependent variable is equal to 1 for a given pair of outgroups if a participant chooses a less favorable allocation for the member of the outgroup she is identifying less strongly with, and 0 otherwise. Identification Preference is measured as the stated WTA for the particular outgroup in units of 100 experimental points in columns (1) – (3). In columns (4) & (5), Identification Preference is measured as the difference in WTAs between the respective outgroups. Outgroup – Other Uni is equal to 1, if the outgroup is from the other university, and 0 otherwise. Outgroup – Low Performance is equal to 1 if the outgroup had a low performance in the math task, and 0 otherwise. Controls include age, gender, and undergrad. Age is measured in years, gender is equal to 1 for men, and undergrad is equal to 1 for bachelor students, and 0 otherwise.

* Significant at the 10 percent level,

** significant at the 5 percent level,

*** significant at the 1 percent level.

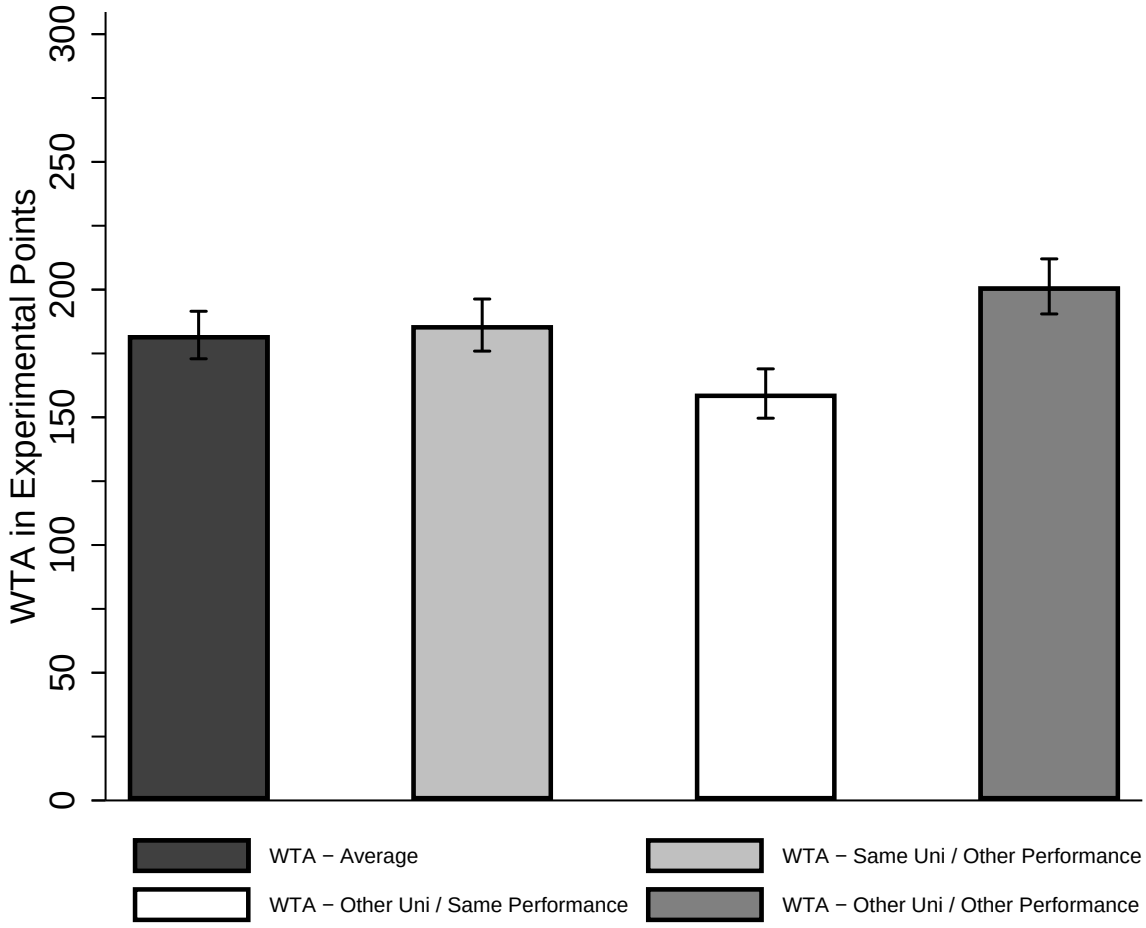

Figure A.1: Identification Preferences – Pilot Study

Notes: The vertical axis indicates the WTA in experimental points, the bars depict the average $WTA \pm$ SE over all groups (dark grey bar) and over the three different outgroups.

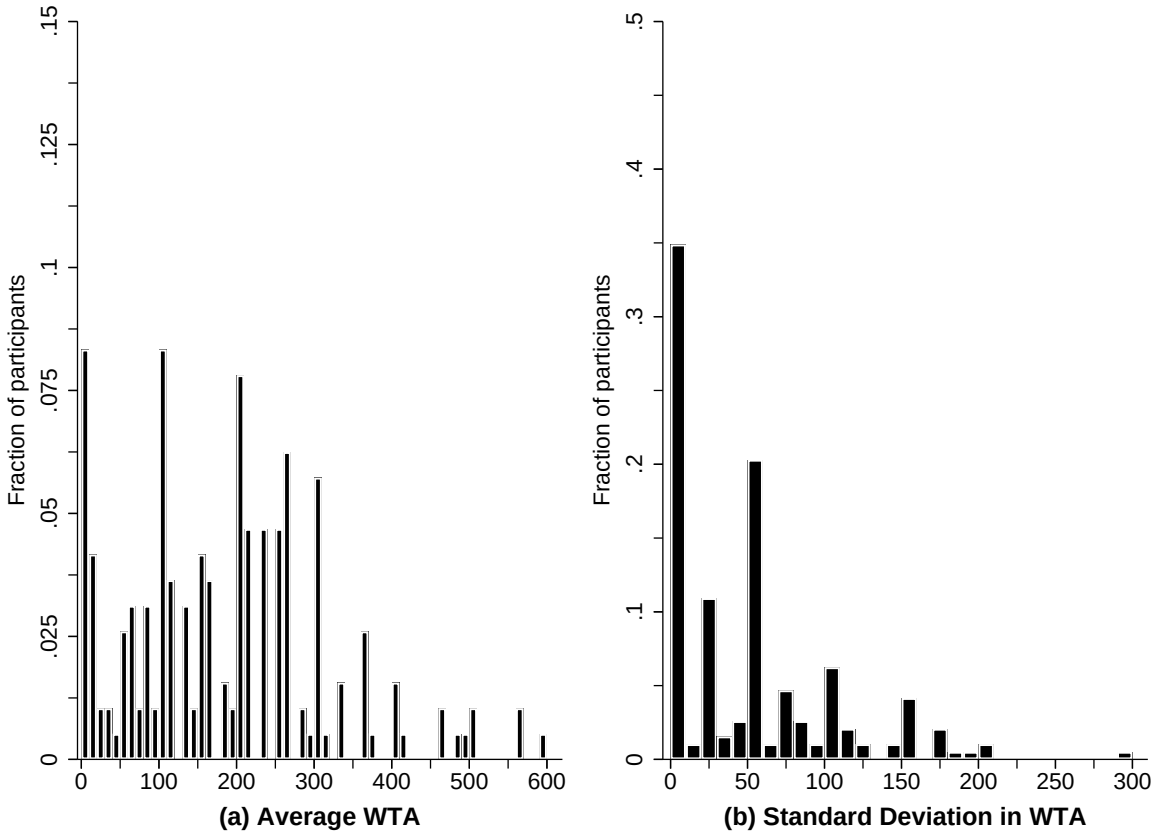

Figure A.2: WTA: Average and Standard Deviation – Pilot Study

Notes: Panel (a) presents the histogram of participants' average WTA over the three outgroups, panel (b) shows the histogram of the within-participant WTA standard deviation across outgroups.

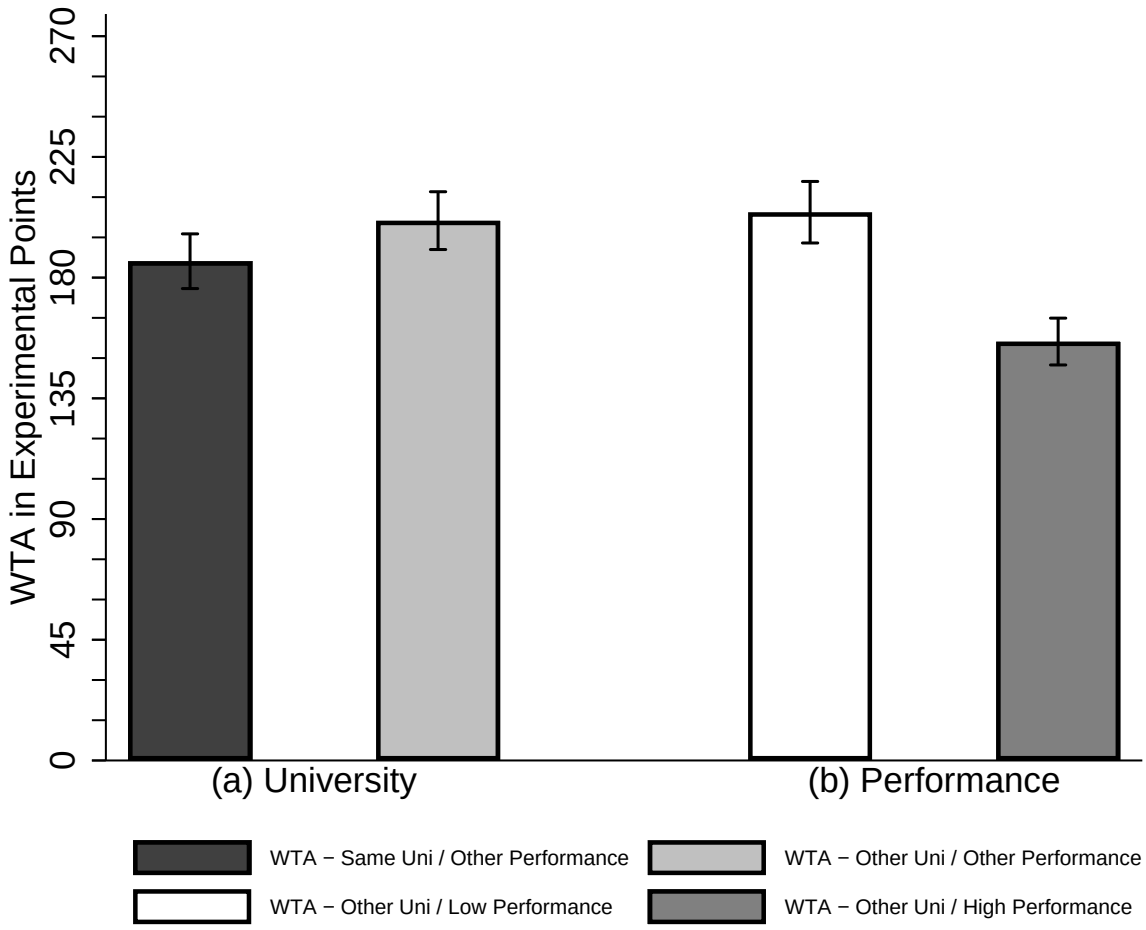

Figure A.3: Identification Preferences: Social Distance and Social Status – Pilot Study

Notes: The vertical axis indicates the WTA in experimental points. The bars in panel (a) represent the social distance dimension (by varying outgroup university affiliation and holding outgroup performance constant) ± SEs, the bars in panel (b) represent the social status dimension (by varying outgroup performance and holding outgroup university affiliation constant) ± SEs.

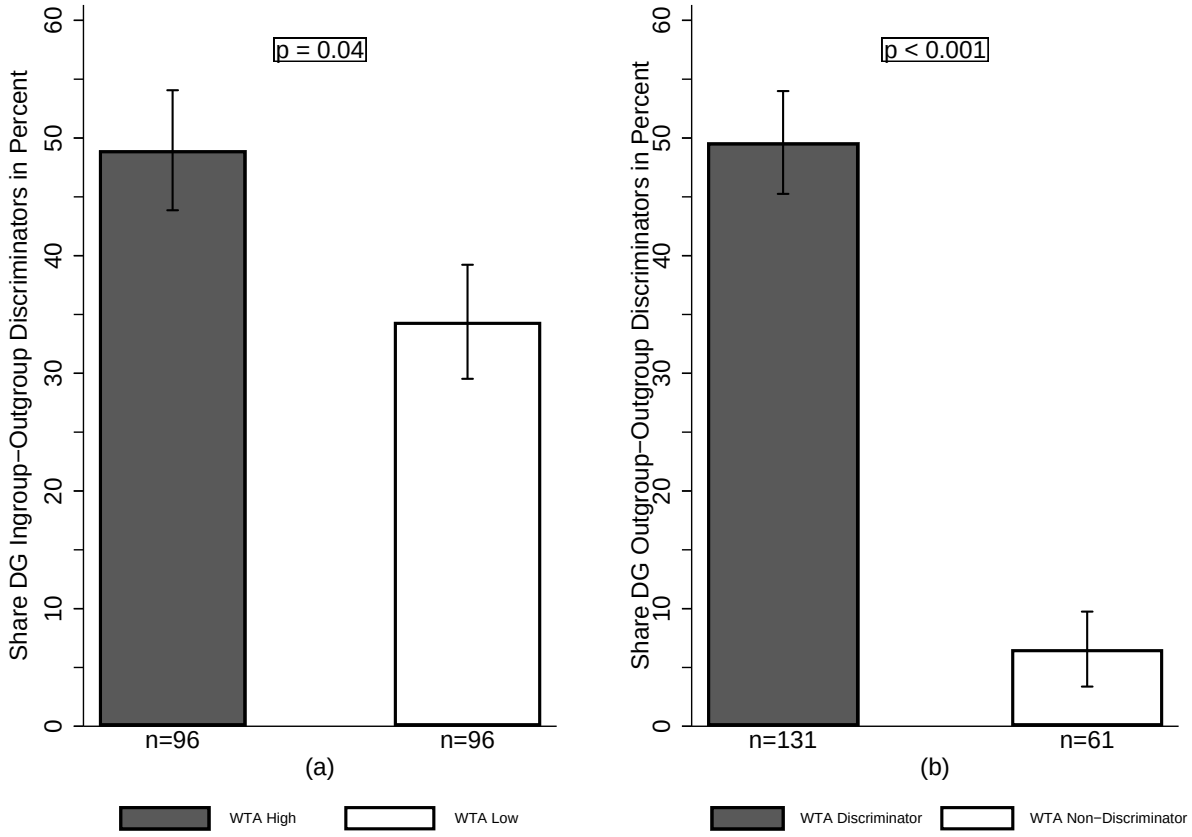

Figure A.4: Discrimination in Allocation Decisions: the Role of Identification Preferences – Pilot Study

Notes: In Panel (a), the vertical axis indicates the share of participants who discriminate between the own group and any of the three outgroups in at least one of the four dictator games. The sample is split by participants' average WTA (grey bar: above median, white bar: below median). In Panel (b), the vertical axis indicates the share of participants who discriminate across the three outgroups in at least one of the four dictator games. The grey bar represents the participants who discriminate between outgroups with respect to their WTA, while the white bar represents those whose WTA does not differ between outgroups. All bars ± SE. p-values from two-sided Fisher's exact tests.

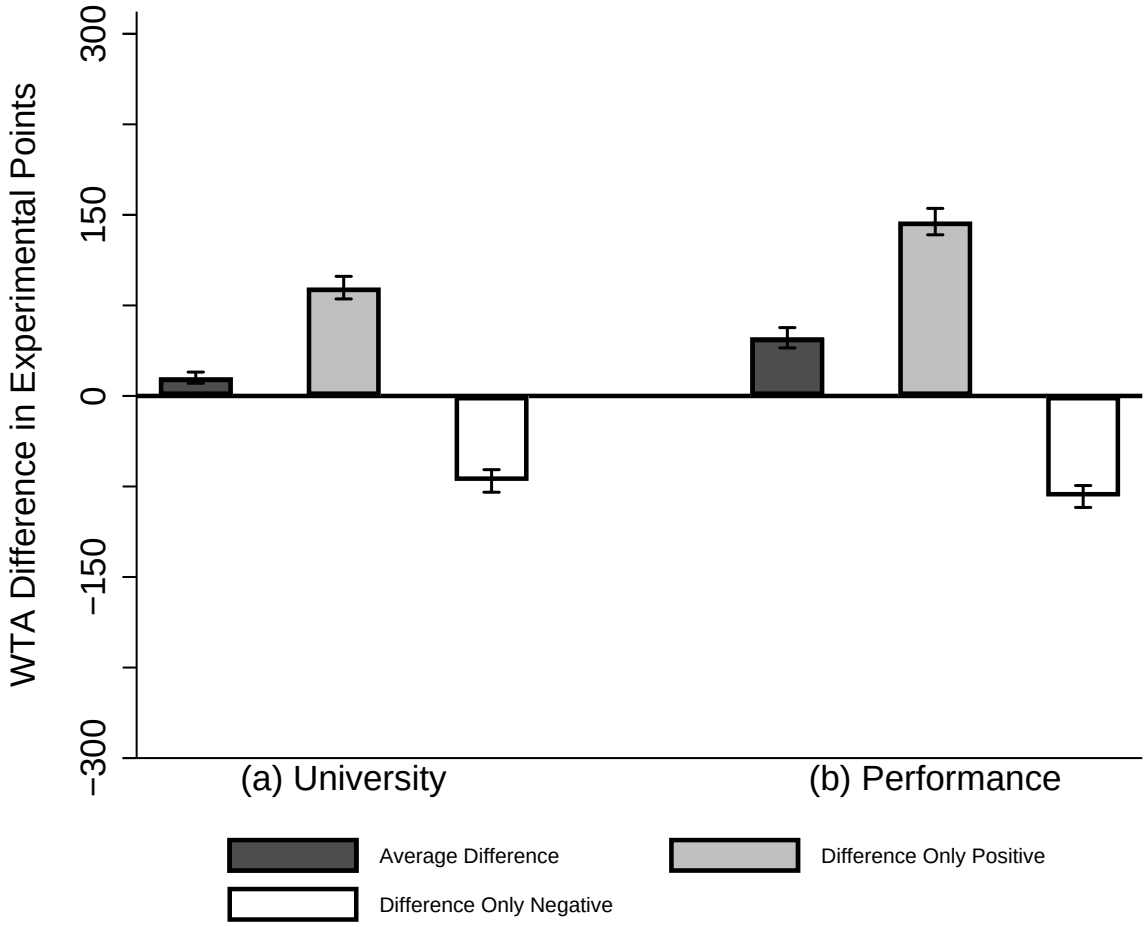

Figure A.5: Identification Preferences: Heterogeneity – Pilot Study

Notes: The vertical axis indicates the WTA difference in experimental points in (a) the university dimension and (b) the performance dimension. The light grey (white) bars show the averages for the subsamples of participants with positive (negative) WTA differences ± SE. The dark grey bars refer to the full sample ± SE.

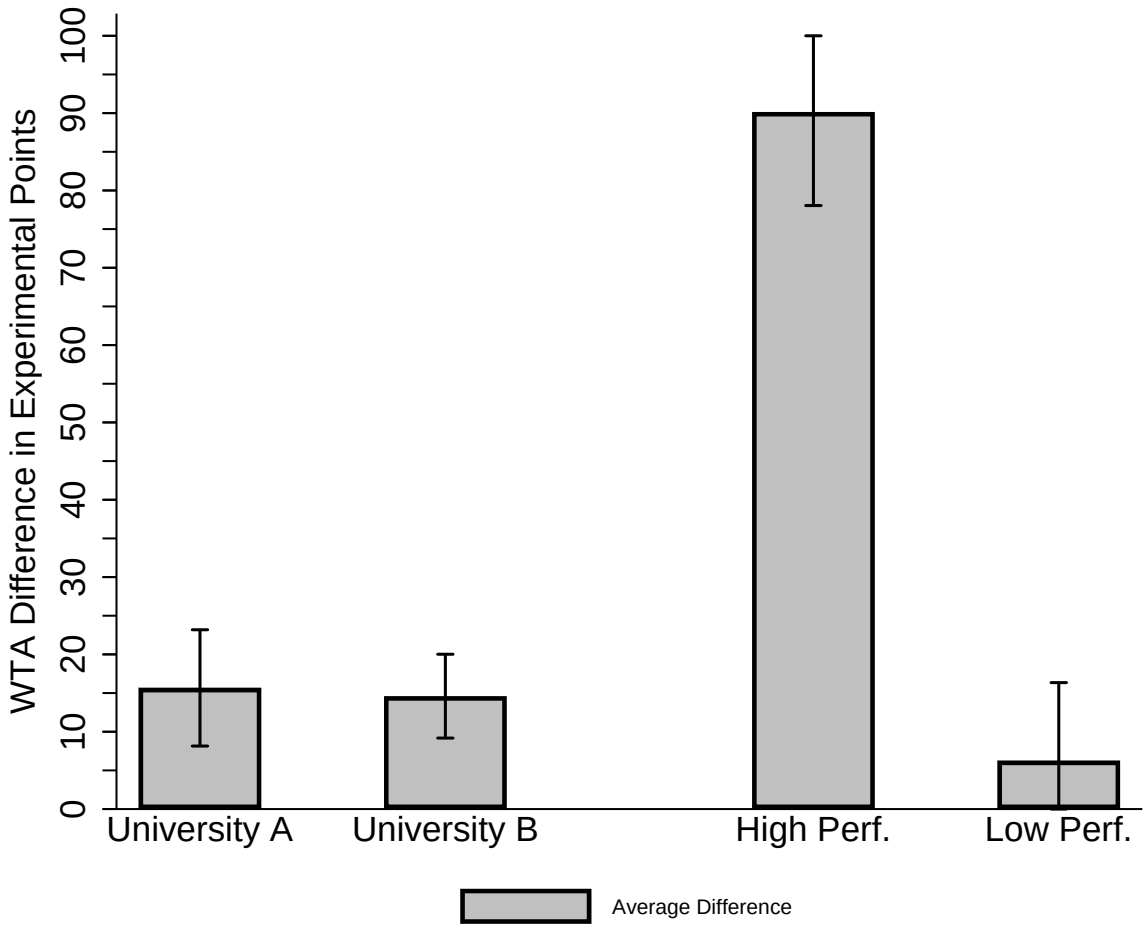

Figure A.6: Identification Preferences: Heterogeneity in Social Distance and Social Status – Pilot Study

Notes: The vertical axis indicates the WTA difference in experimental points. Samples are split by universities (first two bars) and by math performance (bars three and four). The first two bars represent $WTA^{Distance}$ $\pm$ SEs for the two university subsamples, while the last two bars report WTA^{Status} $\pm$ SEs for the high and low performance groups.

Appendix B. Experimental Instructions (translated from German)

General Instructions – Printed on Paper

Thank you for your participation in this scientific study. Please read through the instructions carefully. Everything that you have to know about the participation in this study will be explained in the following. If you have any difficulties in understanding the instructions, please raise your hand. We will then come to your place and answer your question.

For your appearance on time to participate in this study, you receive 4 euro. Throughout the experiment, you can earn additional money. Your earnings depend on your own decisions and those of the other participants. You have to make your decisions on the screen.

This study takes place simultaneously at the universities of Frankfurt and Cologne. The group of participants consists of football fans of the two clubs 1. FC Köln (in the Cologne lab) and Eintracht Frankfurt (in the Frankfurt lab).

Please note that, during the study, communication among participants is only allowed in the prepared chat windows. All other form of communication is prohibited. We request you to only use the open programs for the experiment. Communication with other participants as well as other cases of interference will lead to your exclusion from the experiment.

Note that all the information you provide will be treated confidentially and will not be given to third parties. The data only serves scientific purpose.

Please do now click the 'Continue'-button and follow the instructions.

Instructions Stage I – Printed on Paper

In the beginning you are asked to do some calculations. In each exercise, you have to add up three double-digit numbers.

Only when you solve the exercise correctly, the next exercise will appear.

You now have 90 seconds to solve as many exercises as you can.

Instructions Stage II – Printed on Paper

Within both laboratories, all participants are now assigned to four-person-groups, that is either a green group or an orange group.

The selection into the groups depends on the number of exercises you have previously solved correctly. The twelve best performing participants of each laboratory will be allocated to one of the green groups whereas the twelve worst performing participants will be allocated to one of the orange groups.

So there are three green groups and three orange groups in each laboratory and the green group members have answered more questions correctly than the orange group members in round 1. Neither you nor the other members of your group know each other's identity.

Following group assignment, you are asked to solve three picture puzzles, one after the other, such as the following. Each picture puzzle consists of four pictures that all have one main theme in common. In the given example, this main theme would be 'geometry' (picture top left: geometric shapes; picture top right: set square and compass; bottom left: geometric functions; bottom right: theorem of Pythagoras).

For each picture puzzle, you have 60 seconds to discuss with the other members of your group via the chat window. The chat messages sent by you are only visible for the members of your group. You can only see the messages sent by your own group members. After the one minute of discussion time you have 15 seconds to state your personal answer.

You will **not** be paid for a correct answer.

Note that you are allowed to exchange any content you want via the chat. However, it is prohibited to give any hints about your own identity via the chat. Doing so will lead to your exclusion from the experiment.

Do you have any remaining questions? If not, please click the 'Continue'-button to see which group you belong to.

Instructions Stage III (for Eintracht Frankfurt – High Performance) – Printed on Paper

In the subsequent course of the experiment, there are four groups that are relevant for you. Your own green group of Eintracht Frankfurt supporters, one randomly chosen orange group of Eintracht Frankfurt supporters, and a randomly chosen green and a randomly chosen orange group of 1. FC Köln supporters.

One (and only one) participant from these four groups will now be randomly chosen. This participant will have the chance to be reassigned to one of the three other groups. All remaining participants will stick with their initial groups.

In the next stage of the experiment, these four groups will be given random group-specific payoffs that range between €0 and €8. These payoffs are independent from stages I and II of this experiment. At the end of the experiment, every group member will receive the payoff that is given to her or his group. The participant who is eligible for reassignment to another group will receive the payoff of the new group if she/he moves to the other group.

If you are chosen for reassignment, you will have to decide whether you accept moving to another group or not. You will make your decision as follows:

You state the payoff differential between your own group and the other group (see the figure below) that is just big enough to make you accepting reassignment to the other group. This will have the following consequences:

Case 1: The payoff differential between your green group of Eintracht Frankfurt supporters and the randomly drawn alternative group is larger than the payoff differential for which you would be willing to accept reassignment to the alternative group. Hence you will change groups: You will then receive the payoff of the other group and will be part of the other group for the remainder of the experiment.

Case 2: The payoff differential between your green group of Eintracht Frankfurt supporters and the randomly drawn alternative group is smaller than the payoff differential for which you would be willing to accept reassignment to the alternative group. Hence you will not change groups: You will then receive the payoff of your own green Eintracht Frankfurt group and will stay in your initial group for the remainder of the experiment.

You will make your decisions with the help of three sliders – one for each of the other groups – and have the following options (see the figure above):

- A positive payoff differential implies that you accept reassignment to another group only if

this group's payoff exceeds your own group's payoff by at least the stated differential.

- A negative payoff differential implies that you accept reassignment to another group even if this group's payoff is lower than your own group's payoff (as long as the differential is smaller than the stated differential).
- A payoff differential of 0 implies that you accept reassignment to another group whenever this group's payoff is larger than or the same as your own group's payoff.

In the following, there are three more examples for illustration:

Example 1: You have been randomly selected for reassignment to the orange Eintracht Frankfurt group. Your stated minimal payoff differential implies that you accept reassignment if the payoff of the orange Eintracht Frankfurt group is at least €2.10 higher than your own group's payoff. The randomly drawn payoff for each member of the orange Eintracht Frankfurt group is €6.70, your own group's randomly determined payoff is €4.90. As the payoff differential of €1.80 (€6.70 - €4.90) is smaller than your minimal acceptable payoff differential of €2.10, you will not be reassigned. You stick with your initial group.

Example 2: You have been randomly selected for reassignment to the green 1. FC Köln group. Your stated minimal payoff differential implies that you accept reassignment if the payoff of the

green 1. FC Köln group is at least €1.00 higher than your own group's payoff. The randomly drawn payoff for each member of the green 1. FC Köln group is €7.20, your own group's randomly determined payoff is €4.20. As the payoff differential of €3.00 (€7.20 - €4.20) exceeds your minimal acceptable payoff differential of €1.00, you will be reassigned to the green 1. FC Köln group.

Example 3: You have been randomly selected for reassignment to the orange 1. FC Köln group. Your stated minimal payoff differential implies that you accept reassignment if the payoff of the orange 1. FC Köln group is at maximum €1.50 lower than your own group's payoff. The randomly drawn payoff for each member of the orange 1. FC Köln group is €6.50, your own group's randomly determined payoff is €8.00. As the payoff differential of -€1.50 (€6.50 - €8.00) exactly matches your minimal acceptable payoff difference of -€1.50, you will be reassigned to the orange 1. FC Köln group.

Do you have any remaining questions? If not, please click the 'Continue'-button to see which group you belong to.

Control Questions – On-screen

Please answer the following control questions.

1. Assume that a participant wants to leave her/his group under no circumstance. Which strategy should she/he choose?

1. She/he should choose a minimal acceptable payoff differential of €0 for all three groups.
2. She/he should choose a minimal acceptable payoff differential of €8 for all three groups.
3. She/he should choose a minimal acceptable payoff differential of -€8 for all three groups.
4. She/he should choose varying minimal acceptable payoff differentials for the three groups.

2. Assume that a participant wants to definitely leave her/his group. Which strategy should she/he choose?

1. She/he should choose a minimal acceptable payoff differential of €0 for all three groups.
2. She/he should choose a minimal acceptable payoff differential of €8 for all three groups.
3. She/he should choose a minimal acceptable payoff differential of -€8 for all three groups.
4. She/he should choose varying minimal acceptable payoff differentials for the three groups.

3. Assume that a participant wants to maximize her/his monetary payoff from the group choice. Which strategy should she/he choose?

1. She/he should choose a minimal acceptable payoff differential of €0 for all three groups.

2. She/he should choose a minimal acceptable payoff differential of €8 for all three groups.

3. She/he should choose a minimal acceptable payoff differential of -€8 for all three groups.

4. She/he should choose varying minimal acceptable payoff differentials for the three groups.

4. Assume that a participant would accept reassignment to group A rather than reassignment to groups B and C. Which strategy should she/he choose?

1. She/he should choose a higher minimal acceptable payoff differential for group A than for groups B and C.

2. She/he should choose a lower minimal acceptable payoff differential for group A than for groups B and C.

3. She/he should choose the same minimal acceptable payoff differential for groups A, B, and C.

Stage III Information – On-screen

On the next screen, you can state your minimal acceptable payoff differentials between your group and each of the three other groups.

After this experimental stage, you will take another series of individual choices which are independent of your group assignment. Only after these decisions, you and all other participants will be informed about the randomly drawn group payoffs, which of the 16 participants has been drawn for group reassignment, and whether this participant accepted reassignment or not.

In the subsequent stage, there will be three additional picture puzzles which will be solved in the potentially newly composed groups (if one player was reassigned to another group). These picture puzzles will follow exactly the same rules as in the previous round. For each picture puzzle, you have 60 seconds to discuss with the other members of your group via the chat window. The chat messages sent by you are only visible for the members of your group. You can only see the messages sent by your own group members. After the one minute of discussion time you have 15 seconds to state your personal answer. The only difference to the previous round of picture puzzles is that the composition of two groups might differ if one participant was reassigned to a new group.

As in the previous round, you will **not** be paid for a correct answer.

Instructions Stage IV (for Eintracht Frankfurt – High Performance) – Printed on Paper

In the fourth stage of the experiment, you will be randomly matched with another anonymous participant. The other participant can be a member of your initial green Eintracht Frankfurt group

or any of the other three groups assigned at the beginning of the experiment.

Player 1 receives €10, player 2 receives €5.
If you are player 1, your options are as follows:

1. You can send money to player 2. For every euro of your endowment of €10 which you send to player 2, player 2 will receive 2 euros.
2. You can take away money from player 2. For every euro of player 2's endowment of €5 which you take away, you will receive 50 cents.
3. You can keep your endowment without taking away money from player 2.

You can implement your decisions with the help of a slider in steps of 10 cents. This is, you can send up to €10 to player 2 or you can take away up to €5 from player 2.

Both you and the other player take the player 1 decisions independently for four different scenarios:

- Player 2 is member of your own green Eintracht Frankfurt group.
- Player 2 is member of the orange Eintracht Frankfurt group.
- Player 2 is member of the green 1. FC Köln group.

- Player 2 is member of the orange 1. FC Köln group.

At the end of the experiment, one scenario (and your according player 1 or 2 role) will be chosen randomly to determine your payoff. All games and both of the two roles A and B have the same probability of being chosen.

Do you have any remaining questions? If not, please click the 'Continue'-button and answer the control questions.

Instructions Stage V – On-screen

Please do now solve the following three picture puzzles. You again have 60 seconds to advise with your green Eintracht Frankfurt group before you give your answer.

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