

Ingroup bias and social identification

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Keywords: social identity; ingroup bias; cooperation; experiment; super-categorization.

JEL codes: C91, D03, Z13

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1. Introduction

Building own social identity is a complex endeavor, since individuals may identify with a multiplicity of social groups. Group identification is endogenous and permeable (Akerlof and Kranton, 2000; Benjamin et al., 2010). People are more likely to identify with a group the more similar they see themselves to other group members (Shayo, 2009). Collaborative intergroup contact may however increase intergroup friendships and reduce ingroup favoritism (Lowe, 2021). Once the super-categorized group – to which both the ingroup and the outgroup belong to, and in the context of which intergroup interaction occurs – becomes salient, a larger and more inclusive identity can be activated. In this respect, Levine et al. (2005)’s experiment show that Manchester United supporters turn into willing to help rivals (namely the supporters of a rival soccer team) when salience is given to the common identity of soccer fans. Once others are characterized as members of a super-categorized ingroup that includes all soccer teams fans, such categorization leads to “perceptions of similarity, feelings of greater closeness, and increased feelings of responsibility for the welfare of others” (Taniguchi and Ikegami, 2021, p. 2) that increases the willingness to help.

Which aspects of identity are context-dependent, and which can be primed? As noted by Charness and Chen (2020), “previous work suggests that the dimension of in-group versus out-group seems to be relatively hardwired, while priming identity seems fraught with some peril” (p. 693). This paper studies the role of two fundamental context-dependent aspects of identity in affecting individual ingroup bias in real social groups: ingroup similarity and super-categorization. We conduct an incentivized lab-in-the-field experiment (or artefactual field experiment, since as our subject pool is non-standard) involving 240 subjects who live in deprived conditions in a South-African slum (locally called “township”) and belong to ten groups operating in the slum. Notwithstanding the hard living conditions in these areas, one positive legacy of the segregation period has been to provide a spatial and social basis for long-term cohesion among townships residents (World Bank, 2014), allowing us to consider the township as a community.

The subjects of each group shared mutual interests and endeavors: groups include individuals involved in education or social activities. In addition to acquiring information on groups’ features, we collect information on individuals’ socio-demographic characteristics and attitude towards the community they live in (the township).

2. Experimental design

In our experiment, participants make two individual decision in a randomized order. One decision concerns their individual contribution to a public account that will be used to finance a project or

good that the group will enjoy collectively. For sake of simplicity, we will call it “ingroup public good”; this condition is named “Ingroup Condition”. The other decision relates to their individual contribution to a public account that will be used to finance a project or good that *another group operating in the same slum* will enjoy collectively (“outgroup public good”). The specific group will be chosen at random among the other nine groups recruited for the experiment. This represents the “Outgroup Condition”. In both conditions, the public good is an indivisible sum of money that the group agrees to spend for its common activities, instead of being split among participants as typically occurs in lab experiments on Voluntary Contribution Mechanisms.

The game is one-shot and consisted of two phases. In Phase 1 subjects earned 50 South African rands (corresponding roughly to 15 U.S. dollars, 2014 P.P.P) by answering two questionnaires. Questionnaire A contained standard socio-demographic questions, while Questionnaire B contained, among the others, a set of questions about the relationship the subject has with the other inhabitants in the township. In Phase 2, subjects had to decide the destination of the money they had earned in Phase 1 by determining how many rands they wanted to keep for themselves and how many rands they wanted to give to one of the two public accounts (“Ingroup” and “Outgroup” conditions), presented in a randomized order.

After deciding how much to contribute in the two conditions, subjects were asked to make guesses about their peers’ behavior. This belief elicitation was incentivized using the binarized scoring rule (BSR) introduced in Hossain and Okui (2013).

Only one of the two conditions was actually played: it was determined by asking one subject to roll a dice in front of all the other participants. Before proceeding to final payments, the experimenter read aloud the amount contributed by the group in the selected condition. When the Ingroup condition was selected, the experimenter publicly gave an envelope containing the money for the group to its leader. When the Outgroup condition was selected, the experimenter kept the envelope and gave it to the leader of another group after selecting the group at random among the other nine groups taking part into the experiment. Then, private payments in opaque envelopes (in order not to make the specific contribution of each member recognizable) were carried out after calling subjects one at time. The Instructions are reported in Appendix A, while Questionnaires A and B in Appendix B.

3. Results

Table 1 summarizes the contribution levels and beliefs in the two conditions.

Table 3: Contribution levels and beliefs⁺

Statistics	Ingroup condition (a)		Outgroup condition (b)	
	Contribution	Belief	Contribution	Belief
Average	22.26	19.70	7.18	6.24
Standard error	1.13	1.12	1.49	1.46
Min	0	0	0	0
Max	50	50	50	50
Obs	240	240	240	240

⁺Monetary values in units of local currency (rands).

Contribution levels are significantly lower in the Outgroup condition, providing evidence in favor of the ingroup bias. When subjects contribute to a public good whose returns will be enjoyed by the group itself, the average level of contribution is 22.26 out of an endowment of 50 rands (panel a). When the public good is destined to the outgroup, the average level of contribution is 7.18 (panel b). Using a Wilcoxon rank-sum two-tailed test, the differences between the two conditions is statistically significant: $z = 0.914$, and $p < 0.001$. Beliefs follow a similar pattern: subjects expects peers will contribute significantly more when the money is destined to the ingroup (19.70, see panel a) than when the money is destined to the outgroup (6.24, panel b), and the difference is significant (Wilcoxon rank-sum two-tailed test, with $z = 7.099$ and $p < 0.001$).

To investigate how identity affects economic choices, we use the answers collected in the questionnaires to build two indexes. The information on individual’s gender, education level, housing condition and employment is used to build the Herfindahl-Hirschman index (HHI) of group homogeneity: HHI scores range from 0.00 (complete heterogeneity) to 1.00 (complete homogeneity). HHI is used to test the “similarity” hypothesis, i.e. whether belonging to a more homogeneous group entails a stronger ingroup bias.

Furthermore, we use the answers to the questions 5.1-5.5 in Questionnaire B to build an index that summarizes the individual’s relationship with community of people living in the slum. Since all the ten groups belong to this community, we can consider the community as a super-categorized group. The index is obtained by taking the principal component of a set of five answers capturing how often the subjects gives or takes advice from the members of the community, how the individual perceives the community and neighbors (ranging from being a family to strangers), and how much time they spend in the community. Computing the principal component allows to take into account that these answers exhibit a strong correlation level. The Super-Categorization index (SCI) ranges from 0.00 (when the individual has a very weak relationship with the community) to 1.00 (very strong relationship).

Table 1 below summarizes the effect of the two indexes and of their interaction with the condition.

Table 1: Determinants of contribution levels

VARIABLES	(1)	(2)	(3)
Outgroup	-0.101** [0.041]	-0.101** [0.041]	-0.449*** [0.145]
HHI		2.685*** [0.286]	2.620*** [0.353]
SCI		-0.001 [0.000]	-0.049** [0.022]
HHI_Outgroup			-0.118*** [0.040]
SCI_Outgroup			0.049** [0.022]
Constant	1.050*** [0.069]	-5.364*** [0.613]	-5.478*** [0.771]
Observations	240	240	240
R-squared	0.889	0.889	0.902

The table shows OLS regressions of the subject's contribution level computed as a percentage of the endowment (dependent variable) with condition and subject fixed effects. Since the order of the conditions is randomized at the session level, subject fixed effects also allow to control for order effects. *Outgroup* is a dummy variable assuming value equal to 1 in the Outgroup Condition, and 0 elsewhere. *HHI* is the Herfindahl-Hirschman index of group homogeneity, ranging from 0.00 (complete heterogeneity) to 1.00 (complete homogeneity). *SCI* is the Super-Categorization index, ranging from 0.00 (very weak relationship with the community) to 1.00 (very strong relationship). *HHI_Outgroup* is the interaction variable between the variables *HHI* and *Outgroup*. *SCI_Outgroup* is the interaction variable between the variables *SCI* and *Outgroup*.

In all the regressions, the Ingroup condition is taken as reference. Errors are clustered at the group level. *** p<0.01, ** p<0.05, * p<0.1.

Table 1 confirms the results of the non-parametric tests. The regression in column 1 shows that individuals contribute significantly less when the public good is destined to the outgroup, with respect to the contribution levels observed in case of a public good for the ingroup. When considering the HHI and the SCI indexes (column 2), we find that higher homogeneity within the group (i.e. higher HHI) entails a significantly higher contribution level. This result is likely to be explained by the fact that, in general, more homogeneous groups tend to be more cohesive, and consequently more generous in “generalized exchanges” that are directed also to non ingroup members (Molm et al., 2007). On the other hand, a stronger relationship with the super-categorized group of the slum community (higher SCI) has in general no effect on contribution. Column 3 investigates possible interactions between the indexes and the conditions, showing that higher group homogeneity determines significantly lower contributions when the money is destined to the Outgroup. Furthermore, while in general SCI reduces contributions, we observe that a higher SCI implies that subjects give significantly more in favor to the Outgroup.

4. Conclusions

We investigate the determinants of ingroup bias in a lab-in-the field experiment involving real social groups operating in a slum. We find that similarity increases the ingroup bias, while identification with a super-categorized group reduces it.

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