

Relative Social Status and Conformism: Experimental Evidence on Local Public Good Contributions

1. Introduction

The provision of public goods is characterized by incentives for individuals to free-ride on others' contributions, often resulting in socially inefficient levels of cooperation (Andreoni, 1988; Fischbacher et al., 2001). The experimental literature on public good provision shows that leaders and high status individuals can be effective in improving cooperation (Eckel and Wilson, 2007; Gächter et al., 2012; Kumru and Vesterlund, 2010; Potters et al., 2007, 2005; Vesterlund, 2003). In particular, high status individuals, by setting examples, can encourage particular behaviors among followers (Hermalin, 1998; Vesterlund, 2003). Consistent with these results from the laboratory, a few recent field studies find that social information has a greater impact when it pertains to the behavior of high-status individuals (Bhattacharya and Dugar, 2014; Chen et al., 2016; Jack and Recalde, 2015).

The evidence on the impact of social status on public good provision mostly focuses on absolute status. This paper contributes to this literature by showing that naturally occurring relative social status also matters positively in giving to public goods, independently from absolute one. We use an artefactual field experiment conducted in Colombia, in which participants make repeated contributions to a local natural conservation project with feedback on another participant's donation. We exogenously vary the individual's status – defined through a social ranking exercise- relative to her counterpart's. The results show how making relative status salient can be used to increase donations: higher status individuals donate more and are less prone to conformism than lower status ones. The combination of these two phenomena generates higher and more stable contributions when information is given on the actions of higher status subjects.

These results suggest that priming relative status could be used to induce higher voluntary contributions to local public goods within groups where status is known, or, when status is unknown, some signaling of status could be used to encourage donations. The experiment also makes a methodological contribution, by introducing an easy and versatile way to identify high status individuals within a naturally occurring social group.

The paper is structured as follows. Section 2 presents the experimental setting and design, Section 3 shows empirical results, and Section 4 concludes.

2. Experimental setting and design

A total of 251 individuals, from 8 villages on the Northern coast of Colombia, took part in the study.¹ The villages are similar in terms of economic and environmental characteristics: farming and fishing are the primary economic activities; environmental shocks, mainly flooding and droughts, are frequent causes of harvest loss; and access to infrastructure, such as paved roads and piped water, is generally poor. Each of the 12 experimental sessions - consisting of a ranking exercise, a decision stage and a survey, collecting information on individual characteristics and opinions - was attended by an average of 20 participants.

The ranking exercise was aimed at identifying high status individuals - defined as individuals to whom people delegate power to act on their behalf- among session participants. Subjects were presented

¹ Participants were recruited through public invitations, distributed by local community members. Appendix Table A1 presents summary statistics on study participants.

with different hypothetical situations requiring them to select community representatives.² As soon as one-third of participants were selected, the facilitator halted the process. This group represented the first choice as village representatives. Then participants were asked to select a second group as substitutes, in case the first group were not able to perform the task. The protocol purposely did not impose any structure on the selection process, apart from guaranteeing that it was as inclusive and informative as possible. This ensured the quality of the deliberative process (Lizzeri and Yariv, 2010), while reproducing as closely as possible the collective decision-making processes typical of community meetings (Chambers, 1994). One of the rankings was randomly drawn to be implemented, and participants were seated in groups and given colored cards according to it. In the analysis that follows, participants first selected as representatives according to the randomly drawn ranking are denoted as the top group, the substitutes as the middle group, and the remaining participants as the bottom group.

In the decision stage, participants were asked how much of an endowment of 20,000 Pesos (10 USD, about one and a half times the typical daily farm laborer's wage), they wished to donate to a biodiversity conservation project. Contributions financed the establishment of a tree nursery in a primary school.³ A random draw at the end of the study determined which of the schools serving the sample villages received the funds.

The contribution decision was taken thirteen times: once in private; then, over four rounds of three decisions each. Across these rounds, participants were randomly matched with a partner. Decisions were still taken in private, but partners would observe each other's contributions and know each other's ranking, i.e. the color of the group they belonged to.⁴ Pairs changed each round, and nobody had the same partner twice. By design, all possible pair combinations, on the basis of participants' ranking, were implemented at least once. A random draw at the end of the session determined which of the thirteen choices was implemented. When asked whether they had understood the experimental instructions, 82 percent of participants responded affirmatively. Appendix Table A2 summarizes the experimental design.

3. Results

3.1. Descriptive statistics on contribution levels

² The two situations used for the ranking were: "The mayor has agreed to meet representatives from the village and discuss an important decision. Who among you should go to talk to the mayor?" or "There is a village member who is harming everybody with his behavior. Who among you should go to talk to him about the harm he's doing to the community?" The use of multiple rankings alleviates concerns that a specific confounding factor drove individual ranking. Moreover, the presence of a third placebo ranking, where subjects were asked to select performers for a show, not used to define status, introduced heterogeneity in the rankings and reduced the chance of disappointment or gratitude affecting behavior in later stages of the experiment.

³ Tree nurseries were chosen for a number of reasons. First, they help biodiversity conservation by providing native species to reforest endangered ecosystems and to teach environmental education in schools. Second, tree nurseries are not sources of revenues, as they host mainly medicinal plants and trees without any commercial value. Third, they are easy to establish and maintain without requiring high levels of collective action on the part of recipients. Finally, the nature and benefits of the project were well-known to all participants, as they were part of government-initiated environmental conservation programs.

⁴ Within each round, decisions differed in terms of their observability and of the information available on partner's choices at the time of choosing: the first decision was taken knowing only the partner's ranking, and that the contribution would be observed by the partner; the second was taken after observing the partner's choice, again knowing that the partner would observe one's own choice; and the third after observing the partner's choice, but knowing that the choice would not be observed. All regressions in the analysis include decision fixed-effects.

Table 1 presents average contributions by status group. Overall, subjects give on average 6,886 Pesos, about one-third of their endowment. Top group members donate 7,620 Pesos, significantly more than middle (6801 Pesos, p-value of Mann-Whitney test = 0.007) and bottom group ones (6,245 Pesos, p = 0.000). Giving between middle and bottom group members is also significantly different (p = 0.026). Therefore, moving from the lowest to the highest status level is associated with an increase in giving of almost 1400 Pesos, or 22 percent. These effects are also economically relevant, as the average contribution corresponds to 57 percent of participants' average weekly income (Table A1).

[Table 1]

Figure 1 shows contributions over time by status group. Vertical lines indicate the first decision of each round. The positive correlation between one's own absolute status and giving holds over time, with the exception of bottom-ranked subjects in the first three decisions. There is no clear decreasing trend in giving over time, especially for top and middle group members, a likely result of the effect of higher relative status on giving discussed below.

[Figure 1]

Overall, the presence of a high status member in a pair is correlated with higher and more stable total pair contributions: the difference in total pair contributions between pairs featuring and not featuring a top-ranked individual is on average 12 percent, and growing from 11 percent in the first decision of the round (889 Pesos), to almost 15 percent in the last decision of the round (1,278 Pesos).

3.2. Main results: conformity and status

Figure 2 displays how conformity correlates with absolute (left) and relative (right) status. The bars show the share of subjects who conform, i.e. who adjust their donation level in order to bring it closer to the observed partner's contribution (top panel);⁵ and the average adjustment in giving (bottom panel). Both panels distinguish cases in which the amount the subject gave in the previous period was larger than the partner's donation ($C_i(t-1) - C_j(t-1) > 0$), from those in which it was smaller or equal ($C_i(t-1) - C_j(t-1) \leq 0$).

While there are no statistically significant differences in conformity across status levels when it requires an increase in contribution, both the share of participants who conform and the average contribution change are negatively correlated with status when they entail a reduction in giving. These results do not identify a causal relationship between status and conformity, as individual characteristics determine both.⁶

[Figure 2]

A cleaner identification of the causal impact of status on giving is offered by the exogenous variation in relative status within subjects generated by the design. Table 2 assesses the impact of relative status on the tendency to conform through individual fixed effects regressions. Column 1 looks at the decision to conform, and Column 2 at the change in donation as functions of a subject's relative status, of whether she gave more than her partner in the previous period, and their interaction. In addition to individual fixed effects, regressions include round and decision within round fixed effects.

⁵ Conforming is defined as adjusting giving upward ($C_i(t) - C_i(t-1) > 0$) when the amount the subject gave in the previous period was smaller than the partner's donation ($C_i(t-1) - C_j(t-1) < 0$); or adjusting giving downward ($C_i(t) - C_i(t-1) < 0$) when the amount the subject gave in the previous period was larger than the partner's donation ($C_i(t-1) - C_j(t-1) > 0$).

⁶ See Appendix Table A3.

Results show how the same individual, when ranked higher within a pair, tends to conform less, but only when conforming entails a reduction in giving. The sum of the coefficients on *Higher status*, *Gave more* and their interaction is not significantly different from zero (Wald test, $p = 0.805$), meaning that higher-ranked subjects do not significantly adjust giving downward to conform to their partners. These results are consistent with theories and evidence of status-seeking behaviors: conforming is status enhancing for lower-ranked subjects, but not for higher-ranked ones when it implies giving less, as generosity itself may convey status, especially among individuals perceived as role models within their communities. Alternative explanations, based on the informational value of others' decisions, find less support in the data: the asymmetry and persistence of conformism over time suggests that learning about the value of the public good does not predominantly drive contribution adjustments.

[Table 2]

4. Conclusions

The results from this study show that, given absolute status, exogenous variations in relative status can affect behavior. Being the highest-ranked member of a pair is associated with higher contribution levels, of almost 1000 Pesos. Higher relative status also affects the tendency to conform to others' behavior, resulting in higher and more stable contributions over time. Given the established finding that cooperation in social-dilemma situations decays over time, this result is particularly relevant: simply making individuals' higher relative status within a group salient can affect both their own behavior and the influence they exert on others.

The experiment also makes a methodological contribution. In practice, identifying influential individuals in unfamiliar settings may be challenging and costly. This study presents a solution to the targeting problems, by demonstrating how a simple ranking exercise can help identify high status individuals within a community. An interesting feature of the exercise is its flexibility, which makes it applicable to different settings and to the identification of prominent individuals according to a wide range of traits.

This experiment was conducted with a population of rural, poor individuals dependent on farming and fishing for their livelihood. The experimental results can thus help policy makers and practitioners working in similar settings, both in targeting social interventions and in framing social communication, so as to leverage the power of relative status in shaping public-good contributions.

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Tables and Figures

Table 1. Average contribution

	N	Contribution	
		Mean	S.D.
All	251	6886.38	(5493.67)
Top	83	7620.38	(5984.76)
Middle	84	6801.92	(5310.03)
Bottom	84	6245.51	(5069.24)

Table 2. Relative status and conformism

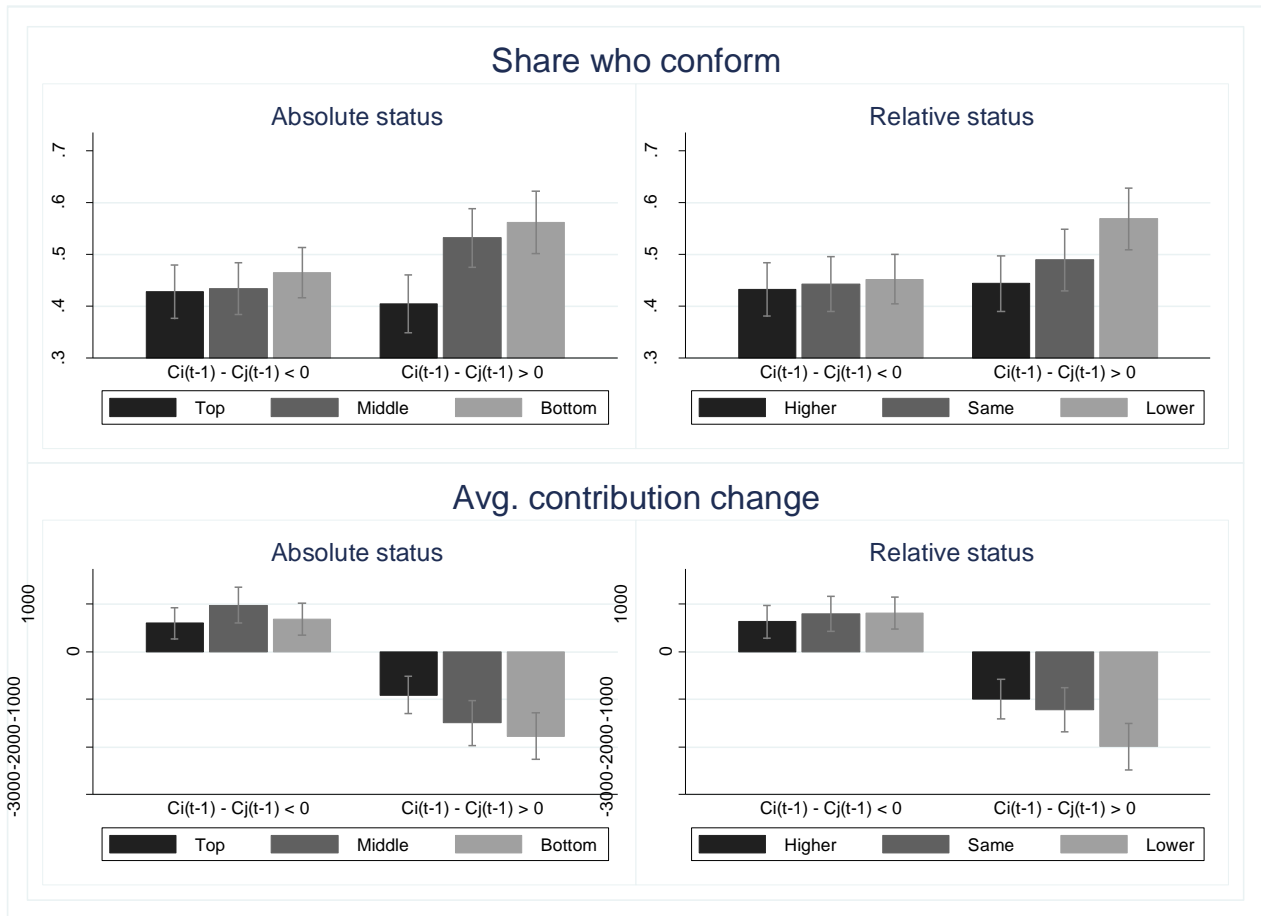
	Conform (1)	Contribution change (2)
Higher status	0.104 (0.167)	-421.768 (292.085)
Gave more than partner in t-1 (a)	0.391*** (0.138)	-3281.981*** (240.346)
Higher status x Gave more	-0.389* (0.228)	896.741** (396.745)
Individual f.e.	Yes	Yes
Round f.e.	Yes	Yes
Within round decision f.e.	Yes	Yes
Constant		1352.047*** (226.385)
Number of Obs	1872	2007
Log likelihood	-832.148	
R-squared		0.079

Note: Fixed-effects logit (Column 1) and linear (Column 2) regressions. Robust standard errors in parentheses. Column 1: 136 observations dropped because of no variation in the outcome variable. (a) Gave more is an indicator variable equal to 1 if $C_i(t-1) - C_j(t-1) > 0$. * significant at 10%; ** significant at 5%; *** significant at 1%.

Figure 1. Contribution over time

[See separate TIFF file]

Figure 2. Status and conformism



Appendix

Table A1. Summary statistics: participants' characteristics

	All groups	Top	Middle	Bottom
	n = 251	n = 83	n = 84	n = 84
	(1)	(2)	(3)	(4)
Age	41.94 (14.93)	44.02 (12.75)	40.26 (14.31)	41.57 (17.08)
Female (%)	39.84 (.49)	25.30 (.43)	41.67 (.49)	52.38 (.50)
Household size	5.16 (2.11)	4.87 (1.98)	5.32 (2.13)	5.27 (2.19)
No education (%)	10.36 (.31)	3.61 (.19)	9.52 (.29)	17.86 (.38)
Primary school (%)	41.83 (.49)	37.35 (.48)	42.86 (.50)	45.24 (.50)
Secondary school (%)	40.64 (.49)	45.78 (.50)	42.86 (.50)	33.33 (.47)
Individual income, previous week (Pesos)	35.146 (56,397)	40.373 (65,899)	40.850 (65,267)	24.146 (26,749)
Farming main source of income (%)	65.74 (.48)	68.67 (.46)	67.86 (.47)	60.71 (.49)
Farm size (he)	2.34 (6.55)	2.18 (3.34)	1.58 (1.90)	3.39 (10.91)
Suffered income loss due to environmental shock, previous year (%)	78.09 (.41)	81.93 (.38)	76.19 (.43)	76.19 (.43)
Number of session participants whom ID says are friends or relatives	3.65 (2.20)	3.58 (1.98)	3.60 (2.28)	3.79 (2.36)
Number of community associations in which ID has a leadership role	.34 (.60)	.60 (.73)	.27 (.50)	.14 (.44)
Member of ASPROCIG (%)	56.97 (.49)	59.04 (.49)	59.52 (.49)	52.38 (.50)
Feels to have influence on community's decisions (%)	88.45 (.32)	92.77 (.26)	90.48 (.29)	82.14 (.38)
Understood instructions (%)	82.47 (.38)	86.75 (.34)	82.14 (.38)	78.57 (.41)
Thinks conservation project is useful (%)	93.95 (.24)	93.90 (.24)	96.39 (.19)	91.57 (.28)

Note: Standard deviations in parenthesis.

Table A2. Experimental design

Decision	Round	Partner	Partner's rank known	Partner's previous choice known	Partner will know own current choice
1	Private		NA	NA	NA
2	1	A (eg. Top group)	Yes	No	Yes
3	1	A	Yes	Yes	Yes
4	1	A	Yes	Yes	No
5	2	B (e.g. Middle group)	Yes	No	Yes
6	2	B	Yes	Yes	Yes
7	2	B	Yes	Yes	No
8	3	C (e.g. Bottom group)	Yes	No	Yes
9	3	C	Yes	Yes	Yes
10	3	C	Yes	Yes	No
11	4	D (e.g. Top group)	Yes	No	Yes
12	4	D	Yes	Yes	Yes
13	4	D	Yes	Yes	No

Table A3. Individual characteristics, status and giving

Dependent variable	Status	Cit
Age	0.04 (0.01)***	-17.49 (21.83)
Female	-0.82 (0.32)**	1.40 (506.89)
Married	-0.02 (0.39)	845.24 (563.33)
HH dependency ratio	-0.05 (0.22)	-514.02 (502.53)
No children living in the HH	-0.17 (0.50)	-664.42 (782.88)
Primary education	1.18 (0.54)**	336.95 (1,046.57)
Secondary education	2.07 (0.59)***	1,213.67 (1,188.47)
More than secondary education	3.19 (0.91)***	935.86 (1,654.01)
Per capita HH income (000)	0.01 (0.01)	24.95 (19.87)
Number of friends	0.19 (0.04)***	42.42 (78.00)
Number of associations in which id has leadership roles	0.88 (0.34)***	226.98 (489.35)
ASPROCIG member	-0.47 (0.34)	1,452.86 (541.62)***
Session fixed-effects	Y	Y
Constant	4.66 (1.14)***	1,996.83 (1,537.37)
(Pseudo) R-squared	0.17	0.31
Obs.	251	3.262

Note: Column1: ordered logit regression, dependent variable is equal to 3 if Top group, 2 if Middle group and 1 if Bottom group. Column 2: linear regression. Std. errors clustered at the individual level in parentheses. * p<0.1; ** p<0.05; *** p<0.01.