

Are perceptions of fairness relationship-specific? The case of noblesse oblige

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Research in experimental economics suggests that decision making in strategic interactions is often guided by a concern for fairness. However, experimental economics studies routinely place participants of equal social status and no prior social history in anonymous interactions, a context that would tend to foster the adoption of an egalitarian fairness norm. Extensive research in anthropology (Fiske, 1991) and psychology (Bugental, 2000) suggests that social norms, including fairness norms, are relationship-specific, raising doubts about whether the concern for egalitarian fairness observed in the experimental economics literature would generalize to a wider range of social relations. In this paper we focus on an alternative social norm characteristic of hierarchical relationships: noblesse oblige—the obligation of high-ranking individuals to act honorably and beneficently towards subordinates. In a series of five experiments, we show that the norm of noblesse oblige predicts tolerance of free riding better than individual self-interest does.

A growing body of research in experimental economics has called into question the rational actor model underlying game theory (for reviews, see Camerer & Thaler, 1995; Dawes & Thaler, 1988; Fehr, Fischbacher, & Gächter, 2002; Gintis, Bowles, Boyd, & Fehr, 2003; Thaler, 1988). Participants in these experiments cooperate and tolerate cheating far more frequently than is predicted by standard analyses based on the assumption of individual self-interest. Because

these studies point to a concern for fairness as a major influence on game play in strategic interactions, several proposals have been made to incorporate fairness into economic theory (e.g., Camerer & Thaler, 1995; Fehr et al., 2002; Fehr & Schmidt, 1999; Kahneman, Knetsch, & Thaler, 1986; Rabin, 1993). But what constitutes a fair outcome?

Perceived fairness, we argue, is relationship-specific, varying with the domain of social

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interaction (cf. Bugental, 2000; Fiske, 1991). In this paper, we focus on relationships between individuals of unequal social status, and we investigate whether a social agent's tolerance of cheating can be moderated by consideration of relative social status. Status can be defined in a number of ways. In these studies, we focus on status as defined by employer–employee relations. In such a relationship, the employer typically controls access to business resources/assets and has authoritative power over employees (i.e., the power to hire, fire, determine remuneration, define job duties, etc.). We refer to this as *authoritative status*.

Experimental economics and the rational actor model

Microeconomics standardly assumes that people act in their individual self-interest, choosing a course of action that will maximize expected utility conditioned on the same rational pursuit of self-interest by one's rivals. The extensive experimental literature on the prisoner's dilemma game suggests that people are far more cooperative than predicted by the rational actor model (see Field, 2001, for a review and discussion), but we illustrate the failings of game theory with findings from the ultimatum game (Güth, Schmittberger, & Schwarze, 1982).

In the ultimatum game, 2 participants are allocated a provisional sum of money, \$total. One participant is designated the proposer and the other the responder. The proposer's task is to propose a division of the money, \$X, to the proposer and \$(total–X) to the responder, in the absence of any negotiation with the responder. The responder's task is to decide whether or not to accept the proposer's offer. If the offer is accepted, the participants are paid according to the proposal. If the offer is rejected, both participants receive nothing. The game theoretic prediction is straightforward: Given that rejection means that the responder will receive nothing, the responder should accept any offer that allocates him or her more than \$0, since something, no matter how small the amount, is better than nothing. Knowing that it is in the responder's interest to

accept any nonzero offer, the proposer should offer the responder the lowest possible nonzero sum of money, keeping the remainder to him- or herself. Game theory fails miserably in its prediction. The modal offer made by proposers across a wide number of replications is close to a 50:50 split of the money (see Roth, 1995, for a review). Moreover, responders routinely reject non-negligible, low offers—typically offers of 20% or less of the total. For example, Slomin and Roth (1998) observed that 37.5% of respondents in a study conducted in the Slovak Republic, who were offered the equivalent of two days' wages from a total of approximately eight days of wages, rejected the offer so that both they and their unfair proposers received nothing.

In response to findings such as these, several economists have attempted to incorporate a preference for fairness into models of strategic decision making. Rabin (1993, p. 1282), for example, suggests that “People are willing to sacrifice their own material well-being to help those who are being kind” and “People are willing to sacrifice their own material well-being to punish those who are being unkind”, where kindness is defined with respect to an equal split of the stakes. As Fehr and Schmidt (1999) note, however, perceptions of fairness are a complicated social matter and yet:

In the laboratory it is usually much simpler to define what is perceived as an equitable allocation by the subjects. The subjects enter the laboratory as equals, they do not know anything about each other, and they are allocated to different roles in the experiment at random. Thus, it is natural to assume that the reference group is simply the set of subjects playing against each other and that the reference point, i.e., the equitable outcome, is given by the egalitarian outcome. (p. 822)

The vast majority of experimental economics games are conducted under such conditions. If one's goal is simply to model game play in the laboratory, then equal outcomes may be a reasonable fairness benchmark. However, if one wants to

generalize the results of experimental economics games to social interactions in the real world, then it may be necessary to adopt a broader perspective with respect to norms of fairness.

Norms of fairness are relationship-specific

Different norms govern different types of social relationship (Bugental, 2000; Fiske, 1991), suggesting that perceptions of fairness will likewise vary across different types of social relationship. Fiske (1991), for example, argues that what counts as a just distribution is a function of *relational model* that governs the domain of interaction. Fehr and Schmidt's (1999) characterization of the experimental economics laboratory exemplifies what Fiske (1991) has termed the *equality matching* model: "Equality matching is an egalitarian relationship among peers who are distinct but coequal individuals. People are separate, but equal" (pp. 14–15), where the principle of a just distribution is: "To each the same. Everyone gets identical shares (regardless of need, desire, or usefulness)" (Table 1, p. 43). However, not all social relationships conform to the equality matching model. Fiske (1991; see also Bugental, 2000) contends that cross-culturally one can observe the operation of four different relational models. The specific context in which each model is employed and the prevalence of each model across contexts may vary from culture to culture, but the models in abstract form are part of our innate endowment, the social algorithms, to borrow Bugental's term, that we use to make sense of our social world.

Our focus here is on one specific relational model, *authority ranking* (Fiske, 1991; hierarchical power in Bugental's, 2000, taxonomy). Social norms are frequently defined (whether implicitly or explicitly) in terms of status, meaning that what constitutes appropriate behaviour for an individual may depend on that individual's status in the group. For example, different standards of compliance are expected from children as opposed to adults and from practitioners of the law as opposed to laypersons. Further, high-status individuals (e.g., elders, authorities) typically take on the role of protecting group

norms, punishing those who fail to comply, and settling disputes among lower-status individuals. In addition to the wealth of anthropological (see Fiske, 1991) and psychological (see Bugental, 2000) evidence for a hierarchical mode of social construal, there is also a considerable evolutionary rationale for the existence of such a mode of construal (Cummins, 1996).

There is also some evidence from studies conducted with the ultimatum game lending support to the view that different conceptions of fairness govern game play when status varies. Hoffman, McCabe, Shachat, and Smith (1994) had participants play a version of the ultimatum game in which participants first completed a current events test and were ranked according to their performance on the quiz. The participant with the highest score was ranked No. 1, was assigned the role of proposer, and was paired with a lower ranked responder; the participant with the next highest score was ranked No. 2, was assigned the role of proposer, and was paired with a lower ranked responder; and so on. Given the explicit ranking procedure and the fact that status in Western cultures is routinely allotted by such a meritocratic procedure, this assignment of roles arguably invoked an authority ranking relational model in the participants. According to Fiske's (1991, Table 1, p. 42) characterization of distribution under the authority ranking model: "The higher a person's rank, the more he or she gets, and the more choice he or she has. Subordinates receive less and get inferior items, often what is left over." The results of Hoffman et al.'s experiment fit this pattern. In contrast with a control condition in which roles were assigned randomly, proposers in the quiz condition made significantly lower offers to the responders without thereby raising the rejection rate. The same effect was observed with the dictator game, in which the responder has no say over the distribution (Hoffman et al., 1994; see also Hoffman & Spitzer, 1985).

Status and individual interest

How might one model the influence of social status on strategic interactions in terms of

individual interest? Without invoking social norms and entitlements, which are somewhat exogenous to microeconomic and evolutionary theorizing, one might ask what effect rank has on the costs and benefits of the opposing parties. Boyd (1992) has analysed reciprocal exchanges in precisely this fashion. Although he frames the situation in behavioural–ecological terms, a microeconomic analysis of human decision making would be roughly parallel. We begin with an assumption that high-status individuals (dominants, in Boyd’s terminology) are in a position to confer greater benefits during a cooperative exchange than are low-status individuals (subordinates, in Boyd’s terminology). This follows from our definition of status—namely, control of resources and authoritative power. Using the prisoner’s dilemma as his framework for modelling reciprocal exchanges, Boyd’s analysis shows that under these circumstances, high-status individuals may still benefit in the long run from engaging in cooperative ventures with low-status individuals if they cooperate only infrequently while low-status partners cooperate frequently. The situation reverses, however, when high-status individuals provide a benefit at lower cost than do low-status individuals. Under these circumstances, low-status individuals will reciprocate infrequently because their cost is higher than the cost incurred by high-status individuals. The model therefore predicts asymmetries in reciprocation that can be predicted in terms of status-based differences in cost/benefit ratios.

This analysis implies differences in tolerance for cheating, when cheating is defined as failure to reciprocate (reneging on a reciprocal arrangement). Unless the cost of providing a benefit is extremely high, initial differences in status-defined control of resources may shift the evaluation of fairness of an exchange in the direction of the higher status individual tolerating more cheating. This means that high-status individuals will be expected to reciprocate fully and reliably on each exchange (100% compliance), while lower status individuals may be allowed to reciprocate infrequently (<100% compliance). Asymmetrical exchanges that have this form,

therefore, may still be considered fair, while asymmetrical exchanges that take the opposite form (<100% compliance on the part of the high-status individual but 100% compliance on the part of the low-status party) may evoke strong feelings of exploitation and unfairness. We refer to this pattern of differences in group-based relationship-specific expectations the norm of *noblesse oblige*.

To test this analysis, we employed a task that is similar to the types of material used by political pollsters in which the individual is given a hypothetical scenario to consider followed by one or more questions. Individuals indicate their responses by selecting a rating from a Likert-type scale. We chose a hypothetical reciprocal agreement that is familiar to most individuals (a car-pooling arrangement), with a slight twist that drew more attention to potential differences in benefits to the parties involved (i.e., the agreement takes place in a country that is not developed economically as Western Europe or the United States).

EXPERIMENT 1: DOES INDIVIDUAL INTEREST OR THE SOCIAL NORM OF NOBLESSE OBLIGE DETERMINE TOLERANCE OF FREE RIDING?

In order to investigate whether individual interest or a social norm of noblesse oblige influences strategic reasoning, we devised a task in which participants indicate how willing they are to continue a reciprocal exchange when they are being cheated. In Experiment 1, the reasoning scenario described a car-pooling arrangement in which one party agreed to drive the other to work, and, in exchange, the other agreed to pay for gasoline. The people in the car-pooling arrangement were a boss (high rank) and his employee (low rank). Participants were cued into the perspective of either the boss or the employee, but in both cases they adopted the perspective of the party who drove, while the other party was free riding to various degrees. Individual interest suggests that participants cued into the perspective of the boss would be less tolerant of free riding, while

the norm of noblesse oblige suggests that participants cued into the perspective of the employee would be less tolerant of free riding.

Method

Participants

The participants in this experiment were 47 students and staff recruited at the Free University, Berlin. All participants were fluent in German. Their ages ranged from 19 to 33 years ($M = 22.5$, $Mdn = 22$). There were 19 males and 29 females. Participants were recruited in a university hallway, and they received a chocolate bar for their participation.

Materials and procedure

The experiment was conducted at a table in the hallway of the university. Participants were instructed to work independently on their problems. Each participant received one problem booklet with four tasks that they completed at their own pace. Each booklet began with an introductory page briefly describing the nature of the experiment and requesting the participant's age, sex, and year of study. Next followed the first ledger task.

The task consisted of a short story describing a car-pooling arrangement between a boss and his employee. The boss (high rank) scenario read as follows (translated from the German original):

Imagine that you own a factory in the developing world. You and one of your employees at the factory are both from the same rural village. Ordinarily both you and your employee would take the train to work—you travelling first class and your employee travelling second class. Unfortunately, service to your village has recently been stopped while repairs are made to a rail bridge, so you are forced to drive your car to work. Gasoline is expensive; you estimate that it costs about DM 20 weekly to drive to and from work every week. You decide to see whether your employee would

like to car-pool, so you make him the following offer:

I'll drive you to work
if you pay me DM 20 weekly to cover the
cost of gasoline.
Your employee agreed.

In the employee (low rank) condition, participants were cued into the perspective of an employee, who normally travels second class, but is likewise forced to drive to work and so proposes the same car-pooling arrangement to his boss, who accepts.

In subsequent testing of this scenario (not presented here), we have observed that estimates of total costs paid do not vary across the boss and employee condition, whereas estimates of total benefits do—employees are judged to benefit more than the boss from the arrangement (across perspective conditions, not within). Moreover, within both perspective conditions, people judge that the driver gets a better deal than the passenger.

The story was followed by a ledger detailing the history of weekly payments over three months (12 weeks). The payments varied from 100% compliance with the agreement, through 75% compliance (three failures to pay), 58% compliance (five failures to pay), to 33% compliance (eight failures to pay). Participants had to consider these four separate ledgers, in counterbalanced order, and indicate the likelihood that they would continue the car-pooling arrangement given each level of compliance. The first ledger followed immediately after the scenario described above and with the remaining three following, each on a separate sheet of paper with the prompt:

Imagine the same situation as before. You have made a car-pooling arrangement with a colleague where he pays for the gas. What would you do if the list of payments for the last three months looked as follows:

Participants were instructed to "Review the ledger carefully, then mark the scale below to indicate **the likelihood that you will continue this car-pooling arrangement**". The scale was a 5-point Likert scale that ranged from "very unlikely",

through “unlikely”, “uncertain”, “likely”, to “very likely”. Answers to this question were scored as follows: “Very unlikely” was assigned a score of 1, “unlikely” a score of 2, and so on to “very likely,” which was assigned a score of 5. If a participant marked a scale midway between two levels, then they were allocated the average of the two scores—for example, 2.5 in the case of a mark falling between “unlikely” (2) and “uncertain” (3).

Results and discussion

Participants’ judgements were more consistent with the norm of noblesse oblige than with individual interest. Specifically, participants cued into the perspective of the boss were more willing to continue the car-pooling arrangement than participants cued into the perspective of the employee (see Figure 1). This was confirmed by a significant Perspective \times Compliance Level interaction.

The data were analysed via analysis of variance (ANOVA) using status (boss or employee) as a between-participants factor and compliance (100%, 75%, 53%, and 33%) as repeated measures. The main effect of compliance was significant, $F(3, 135) = 45.47$, $MSE = 0.67$, $p < .0001$.

This effect was modified, however, by an interaction with rank, $F(3, 135) = 3.02$, $MSE = 0.67$, $p < .04$.

The nature of the interaction was straightforward: Status had no effect at higher rates of compliance ($F_s < 1$ for 100% and 75% compliance), a marginal effect at 53%, $F(1, 45) = 3.00$, $MSE = 1.10$, $p = .08$, and a significant effect at 33% compliance, $F(1, 45) = 4.60$, $MSE = 1.27$, $p < .04$. At this extremely low rate of compliance, participants showed a greater willingness to continue the relationship when they adopted the perspective of the “wronged” boss rather than the perspective of the “wronged” employee. This pattern of responses is consistent with what we refer to as “noblesse oblige”—that is, greater tolerance for cheating when participants adopted the perspective of the higher status person rather than that of the lower status person.

EXPERIMENT 2: DID THE LACK OF AN ALTERNATIVE CAUSE THE NOBLESSE OBLIGE EFFECT?

One potential moderating factor that may have influenced our results is the fact that the protagonist

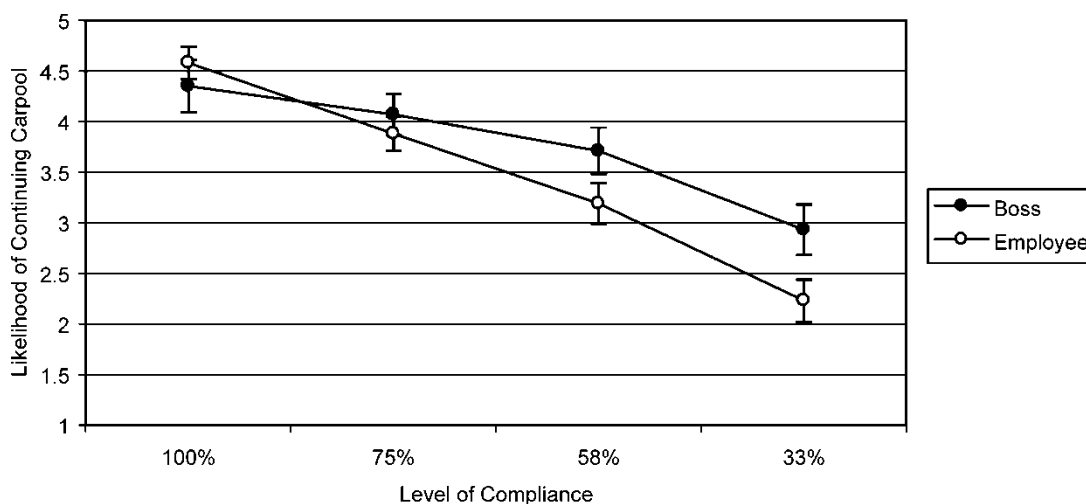


Figure 1. Experiment 1: Noblesse oblige effect. High-ranking boss is more tolerant of free riding. Error bars represent standard errors.

had no other option but to drive to work. The most likely influence that this would have had is to increase the overall willingness to tolerate free riding: If the person has to drive anyway, any amount of reimbursement could be beneficial. This should not have had a differential influence on the boss's versus the employee's tolerance of free riding, but we decided to rule out the possibility of any such confound in the following experiment.

Method

Participants

The participants in this experiment were 48 students and staff recruited at Humboldt University, Berlin. All participants were fluent in German. Their ages ranged from 20 to 44 years ($M = 25.6$, $Mdn = 24.5$). There were 21 males and 26 females. Participants were recruited in a courtyard outside of the university cafeteria, and they received a chocolate bar for their participation.

Materials and procedure

The same procedure and materials as those used in Experiment 1 were used here, with one modification: The scenario also mentioned that there was the possibility of taking a bus to work, but it

was slow and left early in the morning, so the protagonist preferred to drive to work instead.

The experiment was conducted in the courtyard where participants were recruited.

Results and discussion

The same pattern was observed as that in Experiment 1—participants cued into the perspective of the boss were more tolerant of cheating—suggesting that the absence of an alternative means of transport is not responsible for the observed noblesse oblige effect in Experiment 1.

The data were analysed via ANOVA using status (boss or employee) as a between-participants factor, and compliance (100%, 75%, 53%, and 33%) as repeated measures. The same pattern of results was obtained. The main effect of compliance was significant, $F(3, 138) = 41.89$, $MSE = 0.70$, $p < .0001$. As in Experiment 1, this effect was modified by an interaction with rank, $F(3, 138) = 2.67$, $MSE = 0.70$, $p < .05$. The interaction is illustrated in Figure 2. The nature of the interaction was virtually the same as that in Experiment 1: Status had no effect on ratings until compliance reached 33% ($F_s = 0.06, 0.14, 2.33, \text{ and } 4.47$, $MSE = 0.77, 0.92, 1.29, 1.77$, $p = .80, .71, .13, \text{ and } .04$, for 100%, 75%, 53%,

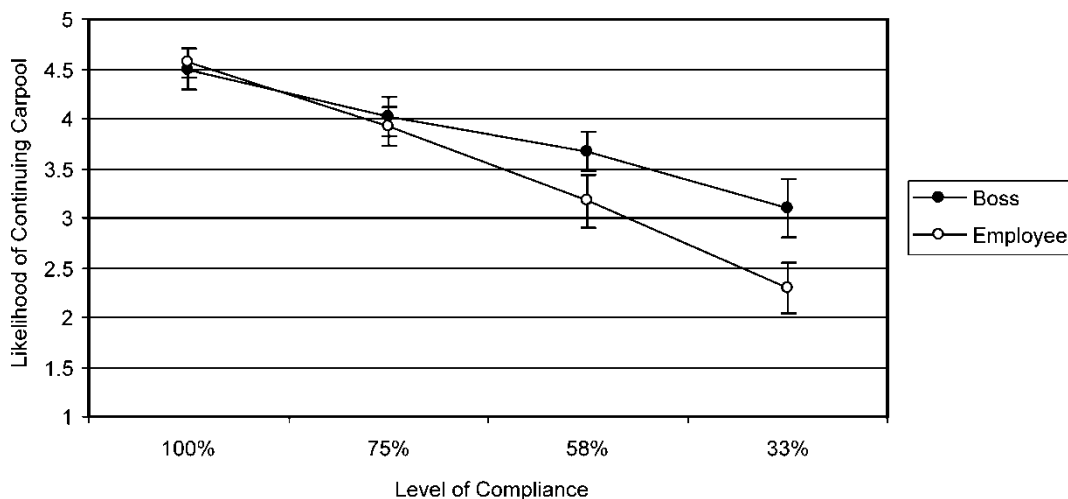


Figure 2. Experiment 2: Noblesse oblige effect remains when there are other options. Error bars represent standard errors.

and 33% compliance, respectively). In short, participants showed remarkable “noblesse oblige”, exhibiting far greater tolerance toward cheating when they adopted a high-status perspective.

EXPERIMENT 3: IS A FEAR OF RETRIBUTION OBSCURING THE RESULTS?

In the previous two experiments we simply asked participants to indicate the likelihood that they would continue the car-pooling arrangement. Unfortunately this question potentially obscures two separate issues: how fairly people feel the protagonist has been treated and whether one would retaliate against unfair actions. The driver might well feel slighted and yet decide to drive the other person all the same. An employee, for example, might worry that his or her job would be jeopardized by ending the car-pooling arrangement. In this experiment we sought to address perceptions of fairness more directly, by asking participants how fairly they believe the protagonist has been treated, and compared answers to this question with answers to the likelihood of driving question. If, for example, participants in the employee condition are failing to act on their feelings, then one would expect to see an interaction in which perceived fairness drops faster than likelihood of continuing the car-pooling relationship with increasing levels of noncompliance.

Method

Participants

The participants in this experiment were an additional 48 students and staff recruited at the University of Bonn (Rheinischen Friedrich-Wilhelms-Universität). Participants were recruited at the university cafeteria. One participant failed to complete the task. The remaining 47 participants were fluent German speakers ranging in age from 19 to 48 years ($M = 26.4$, $Mdn = 26$). There were 30 males and 17

females. Participants received a chocolate bar for their participation.

Materials and procedure

The same basic procedure and materials as those used in Experiment 1 were used here, with two modifications. Participants were asked an additional question: “Review the ledger carefully, then mark the scale below to indicate how fairly you think that you have been treated.” The scale was a 5-point Likert scale that ranged from “very unfairly”, through “unfairly”, “neither”, “fairly”, to “very fairly”. Answers to this question were scored as follows; “very unfairly” was assigned a score of 1, “unfairly” a score of 2, and so on to “very fairly” which was assigned a score of 5. Answers midway between the levels of the scale were treated the same as those with the likelihood scale. Additionally, the levels of compliance employed in this experiment were slightly different: 100%, 75%, 50%, and 25% compliance.

The experiment was conducted in the cafeteria where participants were recruited.

Results and discussion

Participants’ answers to both the fairness question and the likelihood on continuing question both displayed a noblesse oblige effect, with participants in the employee condition judging that their protagonist had been more unfairly treated than participants in the boss condition judged the treatment of their protagonist. More importantly, there was an interaction with answers to the fairness question declining more steeply than answers to the likelihood of continuing question (see Figure 3).

Participants’ ratings were analysed in an ANOVA using perspective (boss or employee), compliance rate (100%, 75%, 50%, and 25%), and question type (Continue? and Fair?) as variables, with repeated measures on the last two. The analysis returned four significant effects. The main effects of compliance rate was significant, $F(3, 135) = 75.62$, $MSE = 1.11$, $p > .0001$, as was the main effect of question type, $F(3, 135) = 25.81$, $MSE = 0.81$, $p < .0001$. These main effects were modified by higher order

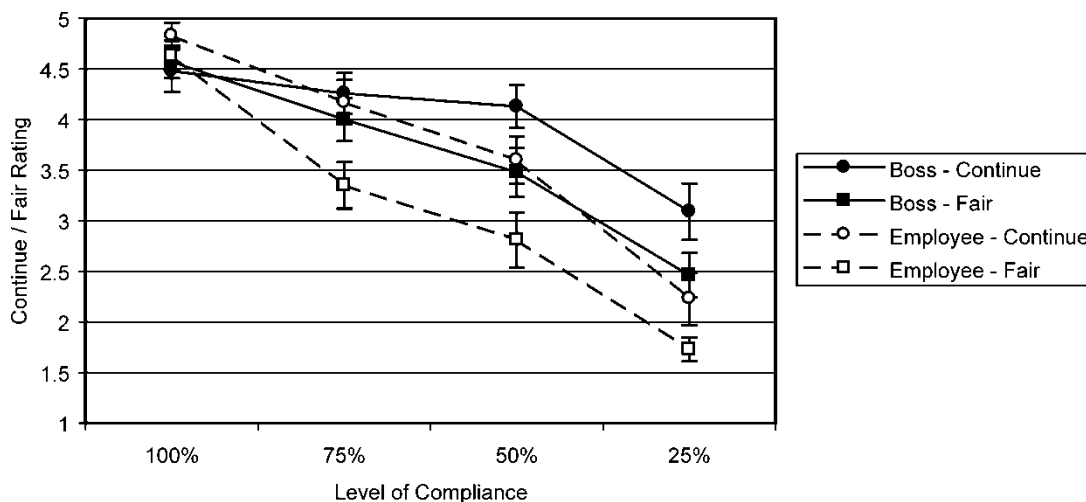


Figure 3. Experiment 3: Fairness judgements display the same noblesse oblige pattern. Error bars represent standard errors.

interactions. Compliance rate interacted with perspective, $F(3, 135) = 3.96$, $MSE = 1.11$, $p < .01$, and with question type, $F(3, 135) = 6.40$, $MSE = 0.30$, $p < .001$. The interactions were straightforward. Simple effects tests on the interaction of compliance rate and perspective revealed the following: no impact of perspective at higher compliance rates, $F(1, 92) = 1.63$ and 2.70 , $MSE = 0.62$ and 1.18 , $p > .05$ for 100% and 75% compliance, respectively, and a large impact of perspective at lower rates of compliance, $F(1, 92) = 5.71$ and 11.52 , $MSE = 1.46$ and 1.28 , $p < .02$ and $p < .001$, for 50% and 25% compliance, respectively. At lower rates of compliance, participants showed a noblesse oblige effect as they did in Experiments 1 and 2: Participants cued into the boss perspective were both more likely to continue the car-pooling arrangement and judged that they had been treated more fairly than did participants cued into the lower ranking employee perspective.

The interaction of compliance rate and question type showed that judgements of fairness eroded faster than did the estimated likelihood of continuing the arrangement. No difference was noted between the two types of rating when compliance rate was 100%, $F(1, 46) < 1$. At each subsequent reduction in compliance rate, however, participants gave lower fairness ratings

than likelihood ratings, $F(1, 46) = 16.57$, 24.46 , and 13.53 , $MSE = 0.42$, 0.42 , and 0.55 , $p < .0002$, $p < .0001$, and $p < .0006$, for 75%, 50%, and 25% compliance, respectively.

The results of this task again showed a noblesse oblige effect. Participants were more tolerant of free riding by subordinates and evidenced less “disgruntlement” on the fairness ratings when cheated by subordinates. Participants’ perceptions of the fairness of the situation declined faster than their estimates of the likelihood that they would continue the car-pool, suggesting that they may suppress their feelings and drive the other person anyway. It is unlikely, however, that fear of retribution biased our interpretation of the results in the previous experiments since the same basic pattern was found on both measures in this experiment.

EXPERIMENT 4: ARE INCOME DIFFERENCES THE CAUSE OF THE NOBLESSE OBLIGE EFFECT?

Another possible confound in the previous experiments is that participants may have assumed that the boss made considerably more money than the employee. Paying for gas under these

circumstances would have constituted a greater relative cost (or hardship) for the employee than the boss. If this were the case, then presumed income differences may have produced differences in perceived relative costs; DM 20 constituted a greater cost to the lower income person than to the higher income person. This would mean that bosses were providing a benefit at lower cost than the subordinate, a situation in which Boyd's model predicts greater free riding on the part of subordinates. A true status effect independent of perceived differences in relative costs, however, would be contrary to this explanation but entirely consistent with the norm of noblesse oblige.

To test this possibility, both rank and income were independently manipulated. The scenarios described a car-pooling arrangement between an owner of a shop and a sales employee. Half of the scenarios in each perspective described the owner as making more money than the employee while the other half described the employee as making more than the owner (due to sales commission income). If perceived status differences were responsible for greater tolerance toward free riding, then we would expect to find such tolerance whenever one party is perceived to be of higher status than the other, regardless of differences in income. If instead, income differences were responsible for the effect, then we would expect greater tolerance whenever one party makes more than the other, regardless of the status of the parties involved.

Method

Participants

The participants in this experiment were an additional 95 students and staff recruited at the Free University, Berlin. All participants were fluent in German. Their ages ranged from 19 to 38 years ($M = 24.9$, $Mdn = 25$). There were 49 males and 56 females. Participants received a fee for their participation.

Materials and procedure

There were four conditions in this experiment: low status/low income, low status/high income, high

status/low income, and high status/high income. Four separate but parallel scenarios were created for each condition (see Appendix). Each participant answered the likelihood of continuing question based on only one scenario. The four compliance levels used in this experiment were 100%, 75%, 50%, and 25% compliance.

The experimental sessions were conducted in a laboratory at the Max Planck Institute for Human Development in Berlin.

Results and discussion

The results replicated the noblesse oblige effect observed in the previous experiments. Participants were more likely to continue the car-pooling arrangement when the employee cheated than when the boss cheated. There was no effect of income on willingness to continue the car-pool (see Figure 4).

As in the previous experiments, participants who displayed inconsistent use of the rating scale were excluded from the analyses. There was one such participant in the low status/low income condition, one in the low status/high income condition, and five in the high income/high status condition. The data from the remaining 87 participants were analysed using status (high, boss, or low, employee) and income (high, makes more, or low, makes less) as between-participants variables and compliance rate as within-participant variable.

The results replicated those of previous experiments. The analysis returned three significant results: the main effect of status, the main effect of compliance, and their interaction, $F(1, 82) = 4.89$, $MSE = 2.21$, $p < .03$, $F(3, 246) = 206.02$, $MSE = 0.48$, $p < .0001$, and $F(3, 246) = 2.65$, $MSE = 0.48$, $p < .05$, respectively. No difference in tolerance due to status perspective was noted at 100% compliance ($F < 1$). When compliance dropped to 75%, participants who adopted the boss perspective showed greater tolerance toward cheating than did participants who adopted the employee perspective, $F(1, 85) = 4.90$, $MSE = 0.90$, $p < .03$. This noblesse oblige effect was also significant at 50% compliance, $F(1, 85) = 4.32$, $MSE = 1.24$,

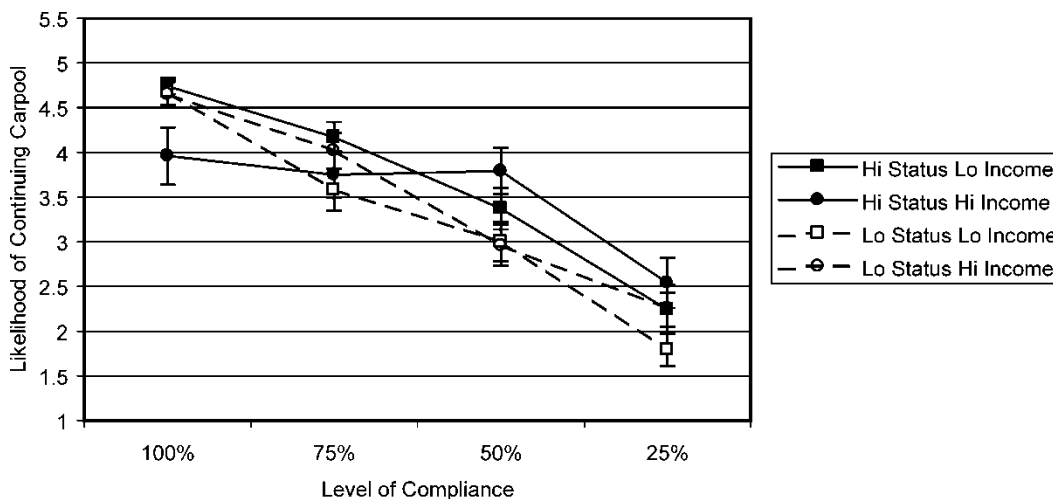


Figure 4. Experiment 4: Status effect but no income effect. Error bars represent standard errors.

$p < .05$. Unlike the previous experiments, when compliance reached 25%, participants in both perspectives gave equally low ratings, $F(1, 84) = 1.64$, $MSE = 1.25$, $p = .20$.

More importantly, income had no impact on ratings as a main effect, $F(1, 80) = 1.75$, $MSE = 2.16$, $p = .19$, nor did it modify the impact of status through interaction ($F < 1$). The most straightforward interpretation of these results is that people felt it was more tolerable for low-status individuals to free ride than high-status individuals. Differences in income appear to have contributed little to differences in tolerance levels. These results are hard to interpret in terms of individual interest, but are consistent with the norm of noblesse oblige.

EXPERIMENT 5: SOCIAL STATUS OR RELATIONAL MODEL?

The results of the previous experiments all consistently suggest that social status influences perceptions of fairness and the tolerance of free riding. But is it simply differences in status, pure and simple, that drive the noblesse oblige effect, or is it the particular social relationship? From the perspective of Bugental's (2000) and Fiske's

(1991) theories, the relational model should be more important. According to these theories, status is not an inherent property of the social world, but a projection of a relational model. Moreover, different relational models may govern the interactions of the same two people in different relationships. For example, a boss and his or her employee may structure their work-related activities in terms of the authority ranking relational model, yet both may agree that when it comes to national elections, all citizens regardless of their status have one equal vote—that is, the equality matching model may govern voting rights. Hence, an “objective” difference in social status alone should not be sufficient to not invoke the authority ranking relational model and the corresponding norm of noblesse oblige. What is important is the relational model that governs the relationship.

We tested this prediction in the following experiment. We separated social status from the authority ranking relational model by placing two individuals with differing social ranks in a relationship that is more likely to be governed by equality matching. Again, the individuals described in the scenario were a boss and an employee, but they were not each other's boss/employee. Instead, they were total strangers who

met through a classified advertisement for a car-pooling partner. If social status alone is responsible for the noblesse oblige effect, then the effect should still be observed even though the people have no prior relationship. If, on other hand, the noblesse oblige effect is a function of the relational model invoked, then the effect should be diminished or eliminated.

Method

Participants

The participants in this experiment were an additional 48 students and staff recruited from the Free University, Berlin. All participants were fluent in German. Their ages ranged from 18 to 33 years ($M = 23.2$, $Mdn = 23$). There were 18 males and 30 females. Participants received a fee for their participation.

Materials and procedure

The same basic procedure was followed as that in the previous experiments. The scenarios employed in this experiment were modifications of the bus alternative scenario from Experiment 2. Again, participants were cued into the perspective of either an employee or a boss, except that now the people worked at different factories and had no prior or ongoing relationship with each other, other than the car-pooling arrangement itself. The boss version of this scenario read as follows (translated from the original German):

Imagine that you own a factory in the developing world. Ordinarily, you would take the train to work. Unfortunately, service to your village has recently been stopped while repairs are made to a rail bridge. You now have two options to get to work: Either you can take the bus or you can drive. The bus is very slow and leaves very early in the morning, so you prefer to drive, but gas is very expensive. You estimate that it costs about DM 20 weekly to drive to and from work every week. You decide to place an ad in the newspaper for someone to car-pool with you. A man replied to it who has

the same journey to work. He is a worker in another factory whom you didn't know previously. You had always travelled first class and he always travelled second class. You made him the following offer for the car-pooling arrangement:

As before, a ledger with the last three months payments followed, along with three additional ledgers on subsequent pages. The levels of compliance were 100%, 75%, 58%, and 33%, as in Experiments 1 and 2.

In the employee version, the scenario remained the same except that now the person driving and placing the ad for the car-pooling partner was a factory worker, and the person replying to the ad was a factory owner (with the former ordinarily travelling second class on the train and the latter travelling first class.)

The experiment was conducted in an experimental laboratory at the Max Planck Institute for Human Development, Berlin.

Results and discussion

The results of this experiment would appear to suggest that differences in social status per se are not sufficient to invoke the norm of noblesse oblige. In contrast with the results of all the previous experiments, there were no differences in tolerance of free riding across the two status conditions (see Figure 5).

An ANOVA was conducted on participants' ratings using perspective (boss or employee) and compliance (100%, 75%, 53%, and 33%) as factors, with repeated measures on the latter. Unlike the previous experiments, the effect of status was not significant in this study, $F(1, 43) = 1.64$, $MSE = 2.05$, $p = .21$, nor did it interact with compliance. Instead, the analysis returned a single significant result: the main effect of compliance, $F(3, 129) = 116.19$, $MSE = 0.54$, $p < .0001$. Tukey's HSD test for pairwise comparisons indicated that a reduction in the willingness to continue the relationship occurred at each reduction in compliance (100% vs. 75% = .93; 75% vs. 58% = .73, 58% vs. 33% = 1.14, critical difference for $p = .05$ was .41).

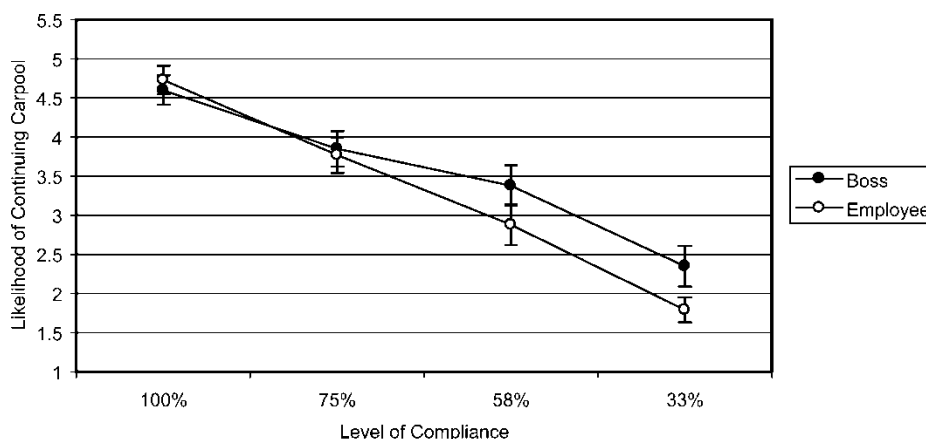


Figure 5. Experiment 5: Noblesse oblige effect disappears when interactants have no prior relationship. Error bars represent standard errors.

However, because our conclusion concerning the importance of a prior or ongoing relationship between agents is based on a null result, it was decided to perform a meta-analysis on the lowest compliance rate data from all five experiments using experiment and rank as between-participants factors. The main effects of experiment and rank were significant, $F(4, 274) = 3.13$, $MSE = 1.40$, $p < .02$, and $F(1, 274) = 20.53$, $p < .0001$, respectively. The interaction of these factors, however, was not significant, $F < .1$. The failure of the interaction to obtain significance weakens our interpretation that consideration of relative rank influences decision making only when the individuals have a prior history/ongoing relationship. Instead, it suggests that the rank effect holds true in all cases. Further research is needed to investigate the true impact of this factor.

GENERAL DISCUSSION

The results of studies presented here complement those found in experimental economics: Decision making in strategic interactions is often governed not by individual interest but by social norms. Our focus on ranked relationships, however, extends beyond the kinds of social relationship typically studied in the experimental economics

laboratory. Where studies conducted in experimental economics laboratories routinely point to equality as the normative standard that participants strive to achieve, our results suggest the influence of a different normative standard, noblesse oblige, in which different parties are held to different standards depending upon their rank.

Viewed more widely, our results and those of experimental economics suggest that social norms are relationship-specific: Different norms apply to different types of relationship. This could potentially complicate efforts to replicate the noblesse oblige effect in the experimental economics laboratory. It may not be sufficient to assemble participants of differing social status to engage in strategic games. As the results of Experiment 5 suggest, the participants might also need to have an ongoing social history in which authority ranking/hierarchical power was the governing relational model. This may be difficult to achieve and may introduce numerous confounds that are routinely controlled for in experimental economics laboratories. Hence, while we are cognizant of the fact that no real incentives or disincentives were provided in our experiments, potentially reducing their generalizability to real social relations, it may prove difficult to test our proposal in a manner that economists would find more convincing.

Nevertheless, some effort could be made to generalize the results methodologically and demographically. Our conclusions are based on college students' responses to a single type of reciprocal exchange—car-pooling. While the results were remarkably robust across the experiments, more research is needed using a variety of reciprocal exchanges, a wider variety of status perspectives, and more complete manipulation of cost and benefits before any definitive conclusion can be drawn concerning the impact of status perspective on social exchange reasoning.

It should be pointed out, however, that the model upon which this work is based and the observations reported here are not without precedent. In fact, there is substantiating evidence of the veracity of this view in evolutionary biology and primatology, suggesting that these norms or strategies are orderly and predictable phenomena that emerge from simple cost-benefit outcomes. For example, observations consistent with Boyd's unbalanced reciprocity have in fact been reported in the primatology literature. Among many species of primates, alliances between nonkin are formed and maintained on the basis of reciprocal obligations, such as food sharing, grooming, or aid in agonistic encounters (Seyfarth & Cheney, 1984; see also Harcourt & de Waal, 1992). These are reciprocal relationships in that the rate of intervention by Individual A on behalf of Individual B is proportional to the rate of intervention of B on behalf of A (de Waal, 1989, 1992). Failure to reciprocate results in termination of the alliance, but, importantly, what counts as reciprocity depends on the rank of the individuals involved. Higher ranking individuals need not reciprocate as often as subordinates in order to maintain the alliance (Chapais, 1992; Cheney, 1983). This is usually explained by reference to the fact that interventions on the part of dominants during combat yield greater benefits (at equivalent costs) to subordinates than vice versa, an interpretation that is consistent with Boyd's analysis. The reverse has also been reported, in which subordinates reciprocate less frequently than dominants, particularly when coalitions are being formed (Silk, 1992, p. 225).

The results reported here, therefore, are consistent with those reported in other literatures. It suggests that the predictive power of economic analyses of human decision-making may be strengthened by consideration of the nature of the relationship between agents.

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APPENDIX

Materials used in Experiment 4

In Experiment 4, social status and income were independently manipulated in order to assess the influence of income differences on the noblesse oblige effect. We therefore constructed four parallel car-pooling scenarios (high status/high income, high status/low income, low status/low income, and low status/high income) as follows:

Boss perspective, boss makes more (high status/high income): Imagine that you are the owner of a shop in the third world. You and one of your employees live in the same village. Your yearly income is DM 40,000, and your employee, who is the top salesman, earns DM 20,000. Ordinarily both of you would take the train to work. Unfortunately, service to your village has recently been stopped while repairs are made to a rail bridge. You now have two options to get to work: Either you take the bus or you drive your car. The bus service is

very slow and leaves early in the morning, so you prefer the car, but gas is expensive. You estimate that it costs about DM 20 to drive to and from work every week. You decide to see whether your employee would like to car-pool, so you make him the following offer:

Boss perspective, boss makes less (high status/low income): Imagine that you are the owner of a shop in the third world. You and one of your employees live in the same village. Your yearly income is DM 10,000, plus the profit made by the shop after taxes. Because of major repairs that needed to be made to the factory, you only received DM 10,000 in profits over the last two years. Your employee earns his income from commissions on the goods he sells. As the top salesman, he was so successful that in the past two years he achieved a yearly income of DM

40,000 on commissions on a commission basis. Ordinarily both of you would take the train to work. Unfortunately, service to your village has recently been stopped while repairs are made to a rail bridge. You now have two options to get to work: Either you take the bus or you drive your car. The bus service is very slow and leaves early in the morning, so you prefer the car, but gas is expensive. You estimate that it costs about DM 20 to drive to and from work every week. You decide to see whether your employee would like to car-pool, so you make him the following offer:

Employee perspective, employee makes less (low status/low income): Imagine that you are an employee in a shop in the third world. You and your boss live in the same village. Your yearly income is DM 20,000, and your boss earns DM 40,000 a year. Ordinarily both of you would take the train to work. Unfortunately, service to your village has recently been stopped while repairs are made to a rail bridge. You now have two options to get to work: Either you take the bus or you drive your car. The bus service is very slow and leaves early in the morning, so you prefer the car, but gas is expensive. You estimate that it costs about DM 20 to drive to and from

work every week. You decide to see whether your boss would like to car-pool, so you make him the following offer:

Employee perspective, employee makes more (low status/high income): Imagine that you are an employee in a shop in the third world. You and your boss live in the same village. His yearly income is DM 10,000, plus the profit made by the shop after taxes. Because of major repairs that needed to be made to the factory, your boss only received DM 10,000 in profits over the last two years. You earn your income from commissions on the goods you sell. As the top salesman, you were so successful that in the past two years your yearly income on a commission basis amounted to DM 40,000. Ordinarily the both of you would take the train to work. Unfortunately, service to your village has recently been stopped while repairs are made to a rail bridge. You now have two options to get to work: Either you take the bus or you drive your car. The bus service is very slow and leaves early in the morning, so you prefer the car, but gas is expensive. You estimate that it costs about DM 20 to drive to and from work every week. You decide to see whether your boss would like to car-pool, so you make him the following offer: