The effects of individual judgments about selection procedures: Results from a power-to-resist game

Vanessa Mertins [a,*], Henrik Egbert [b], Tanja Könen [a]

[a] Institute for Labour Law and Industrial Relations in the European Union (IAAEU), University of Trier, 54286 Trier, Germany
[b] Department of Economics, Anhalt University of Applied Sciences, 06406 Bernburg, Germany

ARTICLE INFO

ABSTRACT

We use a power-to-resist game to find out the effects of individuals' judgments about a proposer's selection procedure on the willingness to offer resistance to proposed outcomes. In the experiment, one individual is selected based on a particular procedure. This individual is allowed to propose how to allocate a pie among five group members: herself and four responders. Then each responder in the group can decide whether to offer costly resistance to the proposed allocation. Resistance is modeled as a threshold public good. If the resistance is successful, the proposer receives nothing. If resistance is unsuccessful, the pie is distributed according to the proposer's decision. We find that resistance increases with (a) the size of the proposal, with (b) subjectively perceived unfairness of the selection procedure for the proposer's role, and with (c) the individual procedural preferences being unsatisfied. Surprisingly, resistance is not affected by whether the group's majority vote on the selection procedure is respected. We check for the robustness of our results and find that the results are stable over two countries. The presented evidence suggests that procedural effects over and above outcomes are relevant in strategic interaction.

© 2012 Elsevier Inc. All rights reserved.

1. Introduction

Most decisions in society are made by one or several individuals, while the outcomes affect many. This is true for decision-making, for example, in the organizational context or in the political sphere. Whether people voluntarily comply with those decisions or resist them may depend on many aspects: What were the alternatives? Who made the decision? According to which rules? How was the decision-maker appointed? As most economic models (e.g., standard neoclassic or outcome-based models of social preferences) follow utilitarianism according to which every choice is judged by the consequent states of affairs, the models would predict resistance to depend only on resulting allocations. However, some of the procedural aspects have been studied experimentally and have been shown to play a decisive role. For example, the alternatives not chosen may yield information about the intentions of the decision-maker, which in turn may trigger reciprocal behavior (Dufwenberg and Kirchsteiger, 2004; Falk et al., 2008). With respect to different role allocation mechanisms, only a few approaches so far have considered potential effects. Hoffman and Spitzer (1985) and Hoffman et al. (1994), for instance, found that responders accept more unequal offers when the role of the proposer was earned rather than randomly assigned. Although this so-called entitlement effect has been proved to be robust across several settings, it is an open empirical question whether responders' behavior is also affected by the perceived fairness of and satisfaction with an appointment procedure assigning the role of the proposer. We test whether people's willingness to offer costly resistance to a decision depends not only on the resulting allocation (outcome fairness/satisfaction) but also on the way the decision-maker has been selected (procedural fairness/satisfaction).

This paper reports the results of a controlled laboratory experiment on resistance to centralized decisions in small groups. Resistance is modeled as a threshold public good: individuals can voluntarily contribute to providing resistance by investing any share of their endowment. Resistance is successful if a sufficient amount of contributions is reached. This setting reflects the possibility of various degrees of participation in the resistance movement, as observable in the real world, which may range from

no participation at all (free-riding on others' contributions), to low-level or even large-scale participation with increasing monetary costs.

The goal of this study is to identify variables that induce or mitigate resistance to others' allocation decisions. We designed a sequential game with groups of five. Before playing the game, individuals were asked to express their preference and fairness judgments concerning the procedure that allocates the role of the proposer among them. One proposer was then chosen out of the group either by the appointment procedure favored by the majority or by the minority. The proposer obtained the right to demand part of a pie, which is at that time equally distributed among the other group members. After having learned about the applied appointment procedure by which the proposer was chosen, they were given the power to articulate resistance to the proposer's demand. As a consequence, we observe responders' willingness to offer resistance depending on the allocation itself, individual fairness perception of the appointment procedure, and individual and group satisfaction with the procedure.

The causes of individuals' willingness to offer resistance are difficult to investigate in the field. In the field, different factors typically coincide and make it difficult to separate distributional and procedural effects. In addition, individual procedural preferences and fairness evaluations often are not observable and cannot be exogenously varied. Furthermore, to study procedural factors that drive people's decisions to accept an allocation, the procedure must not affect subjects' expectations of the resulting outcome. We ruled out this possibility by applying the strategy method (Selten, 1967): responders indicated in an incentive-compatible way which share of their endowment they want to invest in resistance contingent on any feasible allocation proposal. By systematically varying variables that may influence individual resistance, we test how distributional and procedural aspects as well as their interaction influence resistance.

With this work, we contribute to the growing literature on procedural aspects of decision-making. Theoretical (e.g., Krawczyk, 2009; Trautmann, 2009; Frey et al., 2004) and empirical (Benz and Stutzer, 2003; Dolan et al., 2007) evidence suggests that individuals' procedural preferences need to be considered over and above outcomes. Only a few economic experiments so far have investigated the broad field of procedural judgments and their effects. Procedural fairness generated by bias suppression was first studied by Bolton et al. (2005) who show within an ultimatum game that settings with fair procedures (implemented by an unbiased random procedure) leading to unequal outcomes and settings with equal outcomes seem to be treated equivalently by responders. Similarly, Aldashev et al. (2009) report significantly higher work efforts under the fair procedure (random allocation) than under the unfair procedure (direct appointment). Closely related are studies showing the behavioral relevance of fairness intentions (e.g., Falk et al., 2008; Charness, 2004; Offerman, 2002).

Participation in the decision-making process is considered another procedural fairness determinant and has received the most attention in the experimental literature. Recent findings suggest that responders who are allowed to participate in allocation decisions accept smaller shares in an ultimatum game (Grimalda et al., 2008), destroy less in a power-to-take game (Albert and Mertins, 2008), and exert more effort in an experimental gift-exchange game (Charness et al., 2012). Even the mere opportunity for responders to state a payoff-irrelevant request has been shown to increase the acceptance rate of unfair offers (Ong et al., 2012) and to influence dictators' offers (Yamamori et al., 2008).

2. The experiment

2.1. The basic game

The game includes one proposer and four responders. Each responder has an initial endowment of 25 chips. The proposer has an endowment of zero. Instead, she declares the share she wants to have from the responders (hence we speak of a tax), that is, the number $x \in \{0, 5, 10, 15, 20, 25\}$ she would like to receive from each responder. If her proposal is accepted, she gets $4x$, while each responder keeps $25-x$. However, each responder i can pay $y_i \in \{0, 0.5, 1, \ldots, 24.5, 25\}$ in a responder group account. Resistance is modeled as a threshold public good so that contributions to the group account reflect individuals' willingness to pay for resistance. Responders' decisions are simultaneous. Payments to the group account are lost. If the amount in the group account reaches the threshold $t = 26$, the proposal is rejected and each responder keeps $25 - y_i$.[1] In this case the proposer receives nothing. If the sum in the group account is below the threshold t, each responder has to pay x to the proposer. However, responders can pay only what is left after investing in the group account. Thus, the proposer receives $4x$ as the maximum.

For the theoretical analysis, we consider only sub-game perfect equilibria in pure strategies assuming that players maximize their payoffs. Under this assumption, three conditions hold. First, no responder invests more in resistance than the tax proposal x because x is the return of successful resistance. Second, $y_i(x) = 0$ for $x < 6.5$ because then the maximum collective investments are $4x < 26$, that is, resistance cannot be successful. Third, whenever x is high enough for successful resistance, responders coordinate either on non-resistance or on exactly the right amount of resistance because otherwise at least one responder could benefit by reducing her investment unilaterally. Taken together, for tax proposals $x \in \{0, 5\}$, rational payoff-maximizing responders would not offer any resistance ($y(0) = y(5) = 0$). For proposals $x > 5$, the game becomes a coordination game: many sub-game perfect equilibria in pure strategies exist and only some are symmetric in responder strategies. Symmetric equilibria require all four responders to choose the same function $y(x) \in \{0, 6.5\}$. In consequence, two types of equilibria compete against each other: the free-rider equilibrium with zero contribution of all responders no matter how high the tax is and the threshold equilibria, that is, responders successfully coordinate on resistance for at least one tax proposal. Given the responder strategies, the proposer's best response is to select the highest value of x for which there is no resistance. Since $x \in \{0, 5, 10, 15, 20, 25\}$, it follows that $x^* \geq 5$.[2]

2.2. Experimental procedures

Table 1 shows that each session consists of a pre-experimental questionnaire inquiring about basic demographic information and the average time spent on volunteer work (see Appendix for experimental instructions). Three decision stages follow. A post-experimental questionnaire concludes the experiment. After answering the pre-experimental questionnaire, participants are randomly divided into groups of five. However, nobody receives information about the composition of his or her own group or the other groups. In decision stage 1, participants are already accustomed to the structure of the experiment and they are asked to choose between two appointment procedures (APs) for the group's proposer. The choice is between AP1 ("The experimenter appoints a

---

[1] Note that no single responder can achieve rejection.

[2] Note that $x = 5$ is the equal division proposal: 100 chips are equally divided among the five group members.