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Taking the initiative. What characterizes leaders?

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ABSTRACT

Taking the initiative is a crucial element of leadership and an important asset for many jobs. We assess this element of leadership in a game in which it emerges spontaneously since people have a non-obvious possibility to take the initiative. We can show that leadership in this game correlates with real life activities associated with taking the initiative. Combining this game with other experimental games and with questionnaires, we investigate the personality characteristics that entail leadership. We find efficiency concerns and generosity to be important determinants of leadership. Leaders have an internal locus of control and are more patient than non-leaders, but they are not different from the non-leaders with respect to risk attitude. Response time patterns and the results from the cognitive reflection test show that cognitive resources are relevant in the decision to lead.

1. Introduction

Imagine the following situation that recently occurred in the department of the authors of this paper. A group of researchers is sitting in a lecture room, the presentation of a guest of the department is about to start. Trying to connect the speaker's laptop with the projector, people notice that the latter is defect. Some people hectically start pressing buttons and switches, but the projector continues not to be working. Everybody knows that a fast solution is needed so that the presentation can start in time, but only one postdoc actually solves the problem. He inspects the neighboring rooms, finds one in which the lecturer does not use the projector, enters that room and kindly asks the people there to switch rooms. Two minutes later the presentation can start.

The behavior of the postdoc is named *taking-the-initiative* and it has two distinct features, which generalize to many other situations in our everyday life. First, the situation concerns several people who are generally all capable of solving the problem. However, only one or a few of them actually do take the initiative. Second, in many of these situations, the best solution initially requires some creativity or innovation, even though with hindsight it seems quite obvious that this action was needed. Further examples are citizens' initiatives or neighborhood centers creating cultural or sportive offers for disadvantaged young people to keep them busy and out of trouble, or enterprises arranging flexible childcare solutions for their employees when sufficient public childcare is not available. Often this initiative also has the third feature that it encourages others to follow the good example. The open source community is an economically relevant example. Without people like Linus Torwalds who initiate a project and contribute a significant code base, open source projects will never start (Lerner and Tirole, 2002). Taking the initiative is a channel through which cooperation can arise in any bad state of social interaction, be it mutual freeriding in team work or a negotiation with parties irreconcilably opposed. In such situations, it is

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highly desirable that someone breaks the vicious circle by giving a good example, but only some people actually do so. We are interested in the determinants of this behavior. What characterizes people who take the initiative?

We build on a game introduced by Dufwenberg and Gneezy (2000) to study the Bertrand paradox and interpreted by Bruttel (2009a) in terms of leading-by-example. In this game, pairs of two people choose a number between 2 and 100. The person setting the lower number gets the number she chose as a payoff; the other gets nothing. In the case of a tie both receive half the price. This game is repeatedly played with changing pair composition within groups of 12 subjects in total, with all 12 subjects in a group being informed about the decisions of all players in their group after the end of each round.

In this game, typically a cyclical movement of average numbers is observed. In the beginning, the 12 numbers within a group are more or less arbitrarily selected between 2 and 100. During the first few rounds, average numbers decrease, because all participants try to choose a number slightly lower than most of the others. After some rounds, the group reaches a relatively low level of numbers. Eventually though, one player raises the number to a very high level. Many of the other players follow, so a temporary increase of the numbers occurs. This behavior is in no way induced by the experimental instructions, but appears to be very robust. It crucially depends on the feedback condition, because such signaling to the group is only possible because of the group feedback. If subjects only get feedback from their own pair, the chosen numbers continuously decline. We use this game with 8 participants per group, and we consider the initiative to coordinate at a higher level to be endogenous leading-by-example. The person who takes the initiative, we call a "leader". We connect this classification to the decisions in other games and questionnaires eliciting other-regarding preferences, beliefs, risk attitude, patience, cognitive abilities, and other personality characteristics.

According to our results, leaders are characterized by above-average cognitive skills and are predominantly male. They have strong preferences for efficiency, generosity, and against advantageous inequality, and do not primarily seek to maximize their personal monetary benefit or to obtain a positive public image. They have accurate beliefs about the extent to which others will follow their example. Leaders in the experiment have an internal locus of control and are more patient than non-leaders, but we do not find an impact of the big five personality traits or risk attitude on leading-by-example. Finally, we can show that leaders as identified in the experiment are also more likely than non-leaders to engage in activities associated with taking the initiative in their real lives.

The leaders we are interested in have the ability and willingness to improve the outcome of the behavior of a group of people who are "stuck" in a bad situation, but they do not primarily give the good example because they are or want to be a formal leading authority. This makes our definition different from most concepts of leadership discussed in the literature (see Yukl, 2009; Kouzes and Posner, 2007), where the focus is on advising designated leaders. The notion most closely related to our research topic is charismatic or transformational leadership (Bass and Avolio, 1994). However, unlike in situations in organizations, where charismatic leaders inspire followers by their impressive personality (see, e.g., Conger and Kanungo, 1987), leaders in our experiment have relatively weak measures to communicate their "vision" of a cooperative solution to others as face-to-face interaction is ruled out in the computerized experiment. It is particularly the motivation of people taking the initiative which we borrow from this part of the leadership literature.

Hermalin (1998) defines leadership in a very similar way as we do, but the theoretical model of leadership he develops is different from our approach. In the model he discusses, a leader is the only member of the team to have information about their common effort return. By choosing effort before the other group members, the leader can signal this information to the followers, inducing them to provide high effort as well. The experiment of Potters et al. (2005) illustrates that such an informational setup in fact yields coordination on sequential moves to the benefit of efficiency. In our experiment, the action of the leader serves rather as a coordination device but not as a measure to resolve information asymmetries between leaders and followers as all players in our framework receive exactly the same information.

Because of the incentive structure of leading-by-example, this kind of leadership is often studied by introducing a sequential move structure in public good experiments (Gächter and Renner, 2006; Güth et al., 2007; Gächter et al., 2012; Drouvelis and Nosenzo, 2012; Moxnes and van der Heijden, 2007; Pogrebna et al., 2011; Potters et al., 2007; Levati et al., 2007). These studies focus on the mechanism of leadership and typically show that groups with leaders on average contribute more than groups without, but only due to the higher contributions of the leaders.

Public good games capture nicely the incentive structure of leading-by-example. However, in these games it is obvious to all players what constitutes the good example and, therefore, they do not cover the innovative facet of the act of taking the initiative. Furthermore, it is always clear to the subjects that the experiment they are participating in is about leading and following. This may induce experimenter demand effects (Zizzo, 2010) possibly manipulating leadership in either direction. It may reduce leadership because involuntary leaders perform worse; or it may enhance leadership, because even natural non-leaders infer from the experimental design that leadership is socially desirable. In our design, there is no predefined leader. Different from other experiments about leadership, the leading behavior to initiate a number increase in this experiment is neither explicitly nor implicitly induced by the experimenter. There is no explicit assignment of the leading role to a certain subject. Decision making occurs simultaneously, so no player has a distinct role. So we do not address the question of whether a person accepts to be a leader when she is assigned the role but whether a person decides to take the initiative. Thus, our setup avoids the experimenter demand effect problem and includes the innovative element of leadership.

Our research question is related to a recent study by Arbak and Villeval (2013). They investigate the motivations of leaders by combining different variants of a two-stage public good game with personality tests. Similar to our setup, leadership is voluntary in their experiment, as subjects decide themselves whether they would like to make their contribution to the public good in the first or in the second stage of a round. However, the basic experimenter demand effect