Prosocial Behavior and Public Service Motivation

ABSTRACT

Although research on public service motivation (PSM) is vast, there is little evidence regarding the effects of PSM on observable behavior. This article contributes to our understanding of the behavioral implications of PSM by investigating whether PSM is associated with prosocial behavior. Moreover, we address if and how the behavior of other group members influences this relationship. The study uses the (pseudo-)experimental setting of the public goods game (the experimental part), run with a sample of 263 students, in combination with survey-based PSM measures (the non-experimental element). We find a positive link between PSM and prosocial behavior. Moreover, we reveal that this relationship is moderated by the behavior of other group members: High PSM people act even more prosocially when the other members of the group show prosocial behavior as well, but they do not do so if the behavior of other group members is not prosocial.

A fundamental responsibility of those providing public services, as a defining feature of their job, is to offer their support to society at large (Frederickson and Hart, 1985). In doing so, they are often required to think of the common good as being more important than any individual need. According to public service motivation (PSM) theory, certain individuals have a stronger desire to help their societies than others (Perry and Wise, 1990; Perry, 1996; Rainey and Steinbauer, 1999). In line with this, PSM is argued to be linked to activities that are valued by society, such as volunteering or donating blood and time to others (Clerkin, Paynter and Taylor, 2008; Coursey et al., 2011; Houston, 2006).

However, the empirical evidence linking PSM to an individual's behavior is still nascent. As Bozeman and Su (2014) point out, there is a growing need to assess if and how PSM corresponds to *observable behavior*. In order to better unravel the behavioral implications of PSM, and to explore what PSM really entails, this article examines how PSM is related with prosocial behavior in a stylized (pseudo-)experimental set-up. We rely on the well-known public goods game (PGG) as the backbone of our experimental protocol, providing behavioral measures of prosocial behavior in combination with scenario treatments. Specifically, we pseudo-experimentally explore PSM's average effect on prosocial behavior in a PGG, and experimentally explore the moderating effect of environmental conditions on the PSM—behavior relationship. The moderator focuses in the respondent's beliefs about the degree to which other people in the group have acted prosocially.

Our benchmark proposition is that PSM will be associated with observable prosocial behavior in an abstract PGG, in the form of contributing to the production of a public good. However, collective action theory suggests that the decision to act prosocially can be affected by the actions of other members of the group (Ostrom, 1998; 2000). Recent empirical evidence shows that the appeal to help others is embedded within our perceptions of the

latter's attitudes and behaviors (Grant, 2007). We therefore suggest that the relation between PSM and prosocial behavior is moderated by the behavior of others. More specifically, we hypothesize that the relationship between PSM and prosocial behavior is stronger when other individuals also display prosocial behavior, and that high PSM people may or may not—depending on the underlying conceptualization of PSM—revert to non-prosocial behavior in response to egoistic behavior of others.

This second issue is critical from the perspective of the ongoing debate as to what PSM precisely entails. On the one hand, if PSM is a deeply rooted trait-like motivation to act toward the benefit of the greater good irrespective of the behavior of others, then we may expect that a high PSM person will behave prosocially even if the other group members do not. On the other hand, if PSM is more akin to an instrumentally driven attitudinal motivation, then high PSM people may well reciprocate non-prosocial behavior by starting to act non-prosocially as well. We test these hypotheses in a (pseudo-) experimental laboratory set-up with a sample of 263 Dutch university undergraduates. The experimental leg of our design relates to two versions of the PGG (one unconditional, and one conditional, as indicated above); the pseudo- or quasi-experimental leg involves the introduction of survey-based measures of the participants' PSM (both as a main effect and as a moderator variable).

Our theoretical perspective and empirical evidence offer important insights regarding the behavioral consequences of high and low values of PSM, and provide a critical contribution to the debate about what PSM really entails. The current study responds to the call for experimental evidence regarding the behavioral implications of PSM (Bozeman and Su, 2014; Wright, 2008; Wright and Grant, 2010) by assessing the link between PSM and prosocial behavior in a lab-like setting. Furthermore, we address the recent concern related to unraveling moderator variables impacting the link between PSM and observable behavior (Pandey, Wright and Moynihan, 2008) by revealing how others' behavior influences the

relation between PSM and prosocial behavior. The present study shows how individuals

reach a higher level of prosocial behavior when they have high PSM *and* when they act in

groups where the others also display prosocial behavior. In contrast, in the face of egoistic

others, high PSM people revert to non-prosocial behavior.

PSM AND PROSOCIAL BEHAVIOR

Scholars and practitioners alike share a strong interest to deepen our understanding as

to why public employees appear to act more in favor of the common good than their private

sector counterparts. The dominant theoretical perspective to explain what drives public

employees to serve their societies is public service motivation (PSM) (Perry and Wise, 1990).

Although the interpretation of PSM is broad, it is commonly defined as an individual's

motives for engaging in behavior to the benefit of the public interest (Wise, 2000). PSM

refers to behavior that is intended to do good for others, and to shape the well-being of

society (Perry and Hondeghem, 2008). Accordingly, PSM has been used to explain the desire

to serve the interests of society at large (Perry and Wise, 1990; Perry, 1996).

However, scholars have argued that PSM is not a characteristic to be found among

public employees only (Rainey and Steinbauer, 1999). As researchers explored the PSM

construct, they ackowledged that it is a behavioral predisposition of any individual,

irrespective of whether or where s/he is employed, rather than a public sector-specific

characteristic. In line with this observation, recent studies have attempted to determine the

behavioral implications of PSM, as a first step toward understanding how individuals might

better help their societies, and how their leaders can motivate them to do so (see, e.g.,

Houston, 2006; Brewer, 2004; Brewer and Selden, 2000; Clerkin et al., 2009; Perry et al.,

2008).

In this line of work, Brewer (2003) uses data from the American National Election study in 1996 to demonstrate that public employees manifest more civic-minded behavior. In an earlier study, Brewer and Selden (1998) examine whistle-blowing among federal employees as an act consistent with the public service ethic. Whistle-blowers are high performers associated with high job commitment and job satisfaction, yet place themselves at risk to further the public interest. As expected, the finding is that whistle-blowers are more likely to possess PSM-related attitudes than individuals who observe but do not report inappropriate acts. In a similar vein, Houston (2005) presents the results of his study on the likelihood that government, non-profit and for-profit employees engage in prosocial activities. He reports that government and non-profit employees are more likely to show concern toward the common well-being by volunteering time and by donating blood.

Following this stream of research, Houston (2006) examines whether or not public servants are more prone to volunteer, give charitable donations, and donate blood. Using data from the 2002 General Social Survey, Houston shows that both public servants and non-profit employees are more likely to engage in such prosocial behavior than their private counterparts. Although he uses the PSM construct to explain these results, PSM is not measured in this study. In a nutshell, his argument is that although PSM could certainly explain these differences in prosocial behavior, no direct empirical evidence has been collected to estimate the effects of PSM on such observable manifestations of prosocial behavior.

There is a growing consensus that links PSM with prosocial behavior. As Houston (2006: 71) states, "PSM offers an explanation for the giving spirit." According to this author, the desire to serve the public interest implied by the PSM concept is closely related with observable behavior oriented to favor society. In fact, quite a few PSM scholars have centered the construct's very definition toward the notion of altruism. This is the case for

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Rainey and Steinbauer, for instance, defining PSM as an "altruistic motivation to serve the interests of a community of people, a state, a nation, or humankind" (1999: 20). From this perspective, we should expect that those individuals with high PSM are keen to behave prosocially, notwithstanding the altruistic or egoistic behavior of those in society they seek to serve.

Recent research has started to empirically test the relation between PSM and observable prosocial behavior. For instance, Coursey et al. (2011) provide interesting findings to shed light on the relation between PSM and a specific act of prosocial behavior: the choice to volunteer. In their study, individuals with high PSM are more likely to engage in volunteering activities, an effect that seems to be especially strong for individuals volunteering in religious organizations. In a similar vein, Clerkin, Paynter and Taylor (2008) report results linking PSM and the willingness of undergraduate students to participate in charitable activity. Other studies consider the relation between PSM and prosocial behavior within organizations. An example in this line of work is Kim (2006), who examines whether or not PSM explains prosocial organizational conduct, such as organizational citizenship behavior. Testing this relationship in a large sample of 1,739 public employees from the Republic of Korea, Kim (2006) shows how PSM is positively related to altruistic and compliance behavior within organizations.

To summarize, PSM has been defined as an individual's predisposition to act in favor of society or the greater common good. This predisposition should therefore be related to observable behaviors of individuals in favor of their communities. This argument is broadly accepted in the PSM literature; although substantial evidence exists that this is consistent with the behavioral effects of PSM, the link has not been tested directly. Therefore, the first hypothesis we test is a straightforward prediction that follows from the PSM literature.

Hypothesis 1: PSM is positively related to prosocial behavior.

However, this unconditional prediction may well be too simple. After all, classic theories of collective action describe individuals as rational minds who would not act to the benefit of their societies unless these actions imply a clear gain from the perspective of their own interests (Olson, 1965). This argument is known as the *zero contribution thesis,* according to which individuals would by default act individualistically without considering the communities or societies in which they are operating. During the last decades, however, empirical evidence has been accumulated revealing that the zero contribution thesis cannot explain the abundance of individual behavior affecting the common good positively (see, e.g., Bowles, 1998; Fehr and Schmidt, 1999; Selten, 1991). In order to understand why and how individuals condition their behavior toward other members of society, Ostrom (1998, 2000) developed a revised theory of collective action.

Her conceptualization (Ostrom, 1998; 2000) challenges the self-interested zero contribution thesis by arguing that most individuals are conditional cooperators, defined as "individuals who are willing to initiate cooperative action when they estimate others will reciprocate and to repeat these actions as long as a sufficient proportion of the others involved reciprocate" (Ostrom, 2000: 142). This definition entails two key concepts worth considering. The first one is that individuals might not only pursue their self-interest, but instead they may be willing to act for the benefit of their communities or societies. Furthermore, a second concept acknowledges that the prosocial behavior of these individuals might be moderated by the conduct displayed by other members of their community or society.

Indeed, several studies report the contribution of others as being one of the major determinants affecting an individual's contribution to a public good (Fehr and Gächter, 2002; Sonnemans, Schram and Offerman, 1999). As Grant and Berry assert, the motivation to act prosocially is "an other-focused psychological process" (2011: 77); for most individuals, their

likelihood to work in favor of the public good is conditioned by the behavior of their counterparts. Drawing on pure altruistic theories (see, e.g., Clotfelter, 1997), Fischbacher, Gächter and Fehr (2001) reveal that most individuals in their sample do not act as free riders in the context of a public goods game, but instead condition their contributions on those of the other group members: an individual's contribution to the public good is positively influenced by the contribution of the others.

But why do many, or perhaps even most, individuals condition their collaborative behavior on the conduct exhibited by their peers? Grant (2007: 394) provides a plausible argument that "the motivation to make a prosocial difference is an inherently relational phenomenon." He argues that the relations that individuals have with others shape their prosocial behavior. This implies that the desire to help society is embedded within our perceptions of that society, and on how we perceive that others are behaving within our community. This argument is well grounded in extant research on individual emotions. This literature has shown that when a person benefits from someone else's prosocial action, this specific individual is more likely to reciprocate by acting to the benefit of society (Carlson, Charlin and Miller, 1998). Grant and Dutton (2012) claim that there are two main reasons explaining this effect. The first is reciprocity: when an individual benefits from the behavior of someone else, s/he would feel encouraged to act in favor of that other individual in return for the experienced benefit (Gouldner, 1960). The second explanation is positive affect: when someone is benefiting from someone else's action, a more favorable view is developed toward the individual who benefited him or her by acting prosocially.

Accordingly, it can be argued that when we perceive that other members of our society show prosocial behaviors, we will be more likely to follow them and display similar behaviors. Following this line of reasoning, we hypothesize that the relation between PSM

and prosocial behavior is stronger when individuals know that other members of the group have contributed to the public good.

Hypothesis 2: The relationship between PSM and prosocial behavior is positively moderated by the prosocial behavior of the others.

The final step in our chain of argument relates to the ongoing debate in the literature as to whether PSM is a deeply rooted trait or a value-laden attitude (see, among others, Bozeman and SU, 2014; Kim et al., 2013; Wright and Pandey 2008). On the one hand, if PSM is a deeply rooted trait, then high PSM people are intrinsically motivated to act toward the benefit of the greater good *irrespective* of the behavior of others. That is, even if others act selfishly, an individual with a high PSM trait will behave prosocially. On the other hand, if PSM is a value-laden attitude, high PSM individuals will *not* act prosocially when they are confronted with egoistic others. In this case, high PSM people may even reciprocate the non-prosocial behavior of others by acting selfishly as well. This opposing pair of arguments implies two contrasting hypotheses – one reflecting a trait-based motivation interpretation, and an alternative involving its attitude-based counterpart.

Hypothesis 3: PSM will positively affect prosocial behavior even when other members of the group do not behave prosocially.

Hypothesis 3alt: PSM will not, or even negatively, affect prosocial behavior when other members of the group do not behave prosocially.

DATA AND METHOD

Procedures

We conducted a PGG experiment with a large group of first-year bachelor students. They were enrolled in a Business program at a major university in the Netherlands, and

followed a compulsory introductory course on organization sciences (see Urbig et al., in press). At the beginning of the academic year, in September 2012, and as part of this course, students were randomly assigned to tutorial groups consisting of approximately 30 students each. In September 2012, about two months prior to the experiment, all students were asked to participate in an online survey to collect information on socio-demographics, personality traits, and culture-related characteristics; we used the LimeSurvey system.[1] A month later, students were requested to participate in a pen-and-paper survey, which included questions related to PSM. Another month after that, the pen-and-paper-based experiment took place during regular tutorial sessions. Depending on the tutorial groups, the experiment was run in Dutch or English (Urbig et al., in press, examine the language effect). Participation was voluntary, but only students who had filled in the both the online questionnaire and pen-and-paper survey were eligible for money prizes. While not mentioning the specific content of subsequent surveys and experiments, the whole procedure was announced together with the online survey.

The temporal separation of the online questionnaire, the pen-and-pencil survey and the public good experiment, and having the incentivized experiment at the end of the chain, as well as the strict enforcement of anonymity, substantially reduce the threat from common-method variance (Podsakoff et al., 2003), implying a much reduced salience of trying to provide seemingly consistent answers. To match the data and to ensure anonymity, we provided an anonymous login code for the survey and always—in order to avoid missing data resulting from forgotten login codes—asked participants for a unique 12-digit identifier created by the participants from a series of informative items related to their personal circumstances, such as first two letters of their mother's first name or their own birth place.[2] After excluding unmatched data and participants with missing data, the final sample used

throughout the following analyses includes 263 individuals. The average age is 19 years, with 17 as minimum and 23 as maximum; 67 per cent are females.

Experimental design

In order to reproduce real-life decisions on whether or not to contribute to the well-being of a group, we rely on a well-established experimental design: the public goods game (PGG). This particular design has been applied in many studies that examine the drivers, dynamics and mediators/moderators of cooperative behavior (see, for example, Semmann et al., 2003; Hauert et al., 2002). In a nutshell, the PGG implies that participants have to decide how to allocate an initial endowment of a fixed sum of Euros over two options: (a) contributing to a public good that will benefit all members of the group (with a known multiplier; see below); and (b) keeping the money for their own individual benefit. Essential is that the outcome of the PGG has real monetary consequences for each and every participant. As Zelmer (2003) explains, in so doing, the public goods game captures the willingness to contribute to one's community. Arguably, this design offers the opportunity to measure (non)social preferences and behaviors that mimic those that participants would display in real-life decisions (Levitt and List, 2007).

In this study, participants played a three-person public goods game. Participants started with a budget of 20 Euro, from which they could invest between zero and 20 Euro into a joint project. They could only invest amounts of "full" Euros. The non-invested amount remained theirs. The income from the joint project is determined as sixty per cent of the whole group's contribution to the project: i.e., the sum of all contributions is multiplied by 1.8, and the resulting amount is equally distributed among all group members. Thus, from every contribution to the joint project, all group members benefit irrespective of their individual contribution. Appendix A1 provides further detail. Participants made decisions for two versions of the game, as reproduced in Appendix A2. In the unconditional contribution

setting, all group members made their decision without knowing what the others contributed; we refer to this as the *unconditional contribution*. In the conditional contribution setting, one randomly selected group member could condition his or her contribution on what the others had contributed. The conditioning was implemented by means of letting participants provide their decisions for the case of being the one selected to condition the contribution, but also provided their decision for the case of being among the other two group members. When conditioning their contribution, they indicated this for each possible average contribution of the other two group members (between 0 and 20 Euro in steps of 0.50 Euro); we refer to this as the *conditional contributions*.

To ensure a good understanding of the experimental setting, following the initial introduction of the public goods game, we asked 13 control questions (see Appendix A3). When all participants had finished the control questions, the experimenter publicly discussed the correct answers, and responded to open questions from any of the participants. The incentive system for the experiment is a within-subject random incentive system, which is also known as the strategy method (Selten, 1967), in combination with a between-subjects random incentive system (March et al., 2014). Following Fischbacher et al. (2001), we employed the within-subject random incentive system in order to elicit participants' contributions for all possible settings – i.e., the unconditional contribution setting and the different conditions in the conditional contribution setting. Thus, all participants made their decisions for all scenarios, the order of which being randomized. Having one measurement per subject would have substantially decreased the required sample size; hence our decision to employ a within-subject random incentive system.

The between-subject random incentive system was applied to offer payoffs meaningful to students in the context of a limited research budget (March et al., 2014). After the experiment, we randomly selected 12 participants to be paid in real Euros, and grouped

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these into four groups of three participants each. We assigned two groups to the unconditional contribution setting, and two to the conditional contributions setting. For the latter, one member of each group was randomly selected to be the one able to condition his or her investment decisions. Participants' decisions submitted for the corresponding settings and conditions then determined their real monetary payoffs. Thus, participants' decisions were not hypothetical, but each and every decision had—with positive probability—real consequences for participants' monetary payoffs. Both within-subject and between-subject random incentive systems have been shown to be valid in similar settings (Brandts and Charness, 2011; Fischbacher et al., 2012; March et al., 2014). Note that our incentive system implies that there is no feedback about outcomes between treatments and, thus, that such information is provided only after the experiment – i.e., when announcing login codes and parts of the 12-digit self-created identifier of those participants who eventually received payoffs in real Euros.

Variables

To study the degree of responsiveness to other people's (non)investment in a public good, we primarily look at the conditional contribution to the public good as our dependent variable: that is, what people contribute depending upon the other group members' contribution. As a benchmark case, we also examine the unconditional contribution as the dependent variable. This represents a well-established measure of prosocial behavior (see, for example, Semmann et al., 2003; Hauert et al., 2002), since this requires participants to think about what to contribute to the common good for the whole group, at the expenses of their individual gains.

The explanatory variable, *PSM*, is measured using the 12 items from Kim (2011). After appropriately reverse-coding, we averaged the responses to all 12 items to calculate the overall PSM score.[3] Cronbach's alpha of 0.75 indicates a sufficiently good internal reliability

(Hair et al., 2006). The three items measuring the compassion (COM) facet have been argued to be problematic with respect to measurement issues (Vandenabeele, 2008), and this facet's reliability has been argued to vary substantially across samples (Coursey et al., 2008). Indeed, in our data, the internal reliability of the COM facet as reflected by a Cronbach's alpha of 0.55 is low (Hair et al., 2006). Given these ambiguities related to the COM facet, as a robustness check we, separate the COM facet (as the average score of the COM items) from the shortened PSM scale (as an average of PSM items excluding the COM items; Cronbach's alpha is then 0.76). For regression analyses, we standardize all PSM-related variables; coefficients then reflect the change in contribution when PSM variables change by one standard deviation.

The second important explanatory variable for the conditional contribution setting is the others' average contribution to the public good and, particularly, its interaction with *PSM* (Hypotheses 2, 3, and 3-alt). To simplify the interpretation of coefficients of interacted variables, the level of others' contributions is centered, with -1 reflecting no contribution and +1 indicating maximum contribution. Because of centering, the coefficient of *PSM* in a regression that includes the interaction effect of *PSM* and others' contributions can be interpreted as the average effect of *PSM* at a level of others' average contributions of 10 Euro (cf. Cohen et al., 2003). As we also standardized the PSM-facet variables, the coefficient of the level of others' contributions reflects the effect for a participant with average levels of *PSM*.

In line with prior PSM studies, as *person-related control variables*, we include a dummy for female (versus male as the reference group), age and religion, with dummies for Catholic, Protestant and Evangelic, Islamic, no religion, and religion not indicated. Following earlier experimental work in Business and Economics revealing that language can have an effect (Akkermans et al., 2010; Urbig et al., in press), we include a dummy for the language

of the experimental session (English versus the reference group, Dutch) as an *experiment-related control variable*.

EMPIRICAL RESULTS

Table 1 reports summary statistics and bivariate correlations of our key variables at the level of a participant. For the conditional contributions, we report the average contribution over all conditions from 0.00€ in steps of 0.50€ to 20.00€. Figure 1 provides greater detail by plotting the average contribution to the public good for the different settings, as well as that for those scoring high and those scoring low in *PSM* (higher and lower third of the sample, respectively). More specifically, Figure 1(a) considers the overall *PSM* measure, Figure 1(b) involves *PSM* without the COM items, and Figure 1(c) only includes the COM facet. To test our hypotheses, we employ ordinary least squares regression analyses. Bivariate correlations (as reported in Table1) and variance inflation factors below 1.65 do not indicate problems of multicollinearity (Cohen et al., 2003). To control for interdependency of multiple observations per individual for the conditional contribution setting, we estimate clustered standard errors. Estimation results are reported in Table 2.

[INSERT TABLES 1 AND 2 ABOUT HERE]

In Table 2 (see Columns 2 and 5), we observe that *PSM* positively affects unconditional and average conditional contributions to the public good. Thus, individuals with high levels of PSM will, on average, make higher contributions to the public good, both when they do and when they do not know the behavior of the others. Note that these results are even more pronounced when we separate out the compassion items from the *PSM* scale (Columns 3 and 6). This separation of items demonstrates that there is, on average, a negative effect of compassion on contribution to public goods. Our results for both the overall and the

reduced *PSM* scale without compassion items support our first hypothesis that PSM is positively related to prosocial behavior.

Our second and third hypotheses focus on the conditional contribution setting and the moderating influence of the prosocial behavior of the others. As Table 2 reveals (see Column 5), the positive effect of *PSM* on contribution to public goods is stronger for higher contributions of the other group members. Again, the effect is more pronounced when the compassion items are separated out from the rest of the *PSM* scale (see Column 6). Figure 2 illustrates the estimated relationships between *PSM* and contribution to the public good for the different settings. In comparison to Figure 1, which reports raw dependencies, Figure 2 provides the effects while controlling for all other variables included in the regression analysis. We observe that the effect of *PSM* and, particularly, the reduced *PSM* scale without the COM items increases with higher levels of others' contribution. The effect is substantially larger for the reduced *PSM* vis-à-vis the standard *PSM* measure. Hence, the negative effect of COM seems to attenuate the impact associated with the standard measure of *PSM* compared to its reduced counterpart. Furthermore, we observe a strong significant effect of *PSM* when other participants contribute all their money to the public good (β_{PSM}=1.13, S.E.=0.50, and p=0.0; β_{PSM_noCOM}=1.87, S.E.=0.51, and $p<0.001$). The effect of *PSM*, however, vanishes if other group members do not contribute anything (β_{PSM}=-0.02, S.E.=0.15, and p=0.905; β_{PSM_noCOM}=0.22, S.E.=0.20, and p=0.266). So, in support of Hypothesis H3-alt, an individual's PSM does not affect her or his contribution to public goods when others do not contribute.

CONCLUSION

Although the literature on PSM is vast (Ritz et al., in press), little is known as to how PSM affects specific observable individual behavior. As Bozeman and Su (2014) claim, there is a surprising lack of empirical evidence addressing this crucial relation. Although PSM is intended to explain why certain individuals are more prone to act in favor of their communities or societies, little research has offered empirical evidence to back up this claim. We observe a strong relationship between PSM and very concrete behavior in an artificial but incentivized laboratory experiment. Thus, laboratory research reinforces prior evidence of positive correlations between PSM and actual behavior. Observing this relationship for a highly abstract and artificial experimental setup emphasizes the robustness of this relationship. Moreover, moving beyond pure correlational studies, we manipulate what individuals know about others' pro-social behaviors.

We clearly observe that the relation between PSM and contribution to the public good is strongly influenced by what the others' contributions are. These results challenge the extant belief that PSM enhances prosocial behavior regardless of the setting (Pandey, Wright and Moynihan, 2008). We find that the prosocial behavior of high PSM people depends on whether these people are in a setting characterized by other people being more or less prosocial. Indeed, our results show that high PSM people will adjust their behavior to the social context. That is, they act prosocially if they are dealing with prosocial individuals, but they do not act in favor of others if these others do not show prosocial behavior. Additionally, our study sheds new light on the methodological question as to whether or not combining COM with the other facets of PSM into a single formative construct is appropriate. Based on reasons discussed above, we have separated compassion items from the rest of the PSM scale. We reveal opposing effects of the overall PSM score vis-à-vis the reduced scale without compassion items. The effect of the full measure of PSM is clearly attenuated, and has less

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explanatory power than the separate facets. This study adds empirical evidence regarding the need to reassess the role of the compassion facet within PSM (Coursey et al., 2008; Vandenabeele, 2008).

Of course, as any other, this study is subject to a number of limitations that point toward avenues for further research. The most crucial limitation of our study is the quasi-experimental aspect of our design, which does not allow drawing unequivocal conclusions regarding the causal direction of the PSM-behavior relationship (Shadish, Cook and Campbell, 2002). While we can demonstrate a strong connection between PSM and contribution to the public good, we cannot provide clear-cut evidence as to whether this stems from (a) PSM causing a specific behavior (theorized causality), (b) both observed behavior and responses to PSM items being reflections of the same underlying latent construct (co-determination), or (c) from participants who tend to behave in specific ways responding to PSM items in specific ways (reverse causality). Hence, we cannot conclusively answer Perry et al.'s (2008) question regarding the causal direction of the relationship between PSM and prosocial behavior. However, due to our experimental manipulations, we can clearly conclude something about the causal nature of the hypothesized moderator – i.e., the beliefs about others: when interacting with individuals displaying low prosocial behaviors, high PSM people will *not* contribute more to a public good.

Furthermore, while relatively high internal validity is a clear advantage of the experimental approach, this benefit can be associated with a lack of external validity, often argued to be a major limitation of laboratory-based experimental designs (Levitt and List, 2007; van Witteloostuijn, 2015). Generalizability is also limited by the nature of our study sample, which was entirely formed by university undergraduate students. On the one hand, this focus on a relatively homogenous sample of young students may raise issues regarding the extent to which our findings can be generalized to a broader population. However, on the

other hand, this reduces the influence of noise, as well as threats from endogeneity and sample selection biases, and increases the power of incentive compatibility (van Witteloostuijn, 2015). Moreover, student samples are appropriate in studies focusing on fundamental human processes (Bello et al., 2009), as is common practice in much of the psychology literature. Indeed, the examination of potential drivers of prosocial behavior is a classic example of such fundamental human processes.

Specifically, in a study such as ours, with a focus on the role of PSM, undergraduate students offer the advantage of *not* being associated with too much noise and estimation biases due to real-life experiences resulting from endogenous selection into different occupations (cf. Bönte et al., 2015). That is, employees with longer tenures in real organizations bring their experience to the table, on top of and beyond the 'pure' effect of PSM. Recent research shows, for example, that age is slightly positively correlated with prosocial behavior in public goods games (Rieger and Mata, 2015).[4] It could, thus, be argued that the relation between PSM and contribution to public goods might be different for individuals with longer tenures. More importantly, however, these older individuals' PSM scores may well be colored by their experiences, which are based on occupational choices that in turn are based on their (earlier) PSM scores. With our sample of undergraduate students, we limit this type of 'experiential noise' and related endogeneity. Future research, however, could build on our work, and examine the extent to which the effects observed in our study can be replicated in settings characterized by highly heterogeneous work experiences. So, future research can replicate our lab-survey quasi-experiment with other samples – e.g., public managers in charge of the administration or the implementation of a public policy.

Finally, the present study has linked PSM with a specific type individual behavior, contributing to a public good, but future studies could explore whether or not and to what

extent PSM can explain other fundamental public management behaviors. If our findings would be replicated in other (non-laboratory) settings, these results will have important practical implications for those in charge of public services. As this study has shown, those employees with high levels of PSM would be more prone to develop more effort in helping their communities and societies if they are grouped with other employees that also behave prosocially. Furthermore, at the organizational level, actions could be taken to enhance the opportunity for employees and managers to engage in prosocial behavior. Our evidence implies that this could help to create an organizational climate in which individuals with high PSM would be encouraged to devote all their efforts toward the common good.

NOTES

1. www.limesurvey.org

2. By matching the unique 12-digit identifiers, we created a new dataset linking all survey information to the experimental data at the level of each individual participant. Only five cases had to be matched manually (e.g., due to typos, and because a twin had produced identical identifiers).

3. Coursey et al. (2011) strongly suggest calculating scores of PSM (and its facets) based on a second-order reflective confirmatory factor analysis. We implemented such an analysis and estimated the corresponding scores. As this analysis gives equivalent results (available upon request), we report the simpler analyses based on the sum scores.

4. Note, however, that our sample is associated with PSM values very similar to those obtained in other studies developed in other countries and using participants with working experience (see, for example, Bright, 2008; Taylor, 2007).

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APPENDIX A1: EXPERIMENTAL INSTRUCTIONS (BASIC INFORMATION)

For both experiment's parts, a and b

You are a member of a three-person project group. Every member decides about the investment of 20 Euro. Either the money is partly or completely put into a separate account OR it is partly or completely invested into a joint project. Every Euro that is not invested into the joint project is automatically put into the separate account.

Income from the separate account: Every Euro put into the separate account is taken out at the end and will be part of your total income. If you do not invest anything into the project, all is put into the account and at the end you earn 20 Euro plus the income from the project. If you only put, for instance, 10 Euro into the account, you have 10 Euro at the end plus the income from the project.

Income from the project: The amount you invest into the project equally benefits all members of the project group. Similarly, you will also benefit equally from the other group members' investments. Your income from the project is determined as sixty percent of the whole group's investment into the project.

Examples of project investments: If, for instance, together all three group members invest 60 Euro – i.e., each member invests 20 Euro –, then you and the other group members each receive 36 Euro. If two group members invests 8 Euro and another invests 14 Euro, which is 30 Euro as a group, then you and the others – independent of who invested 8 or 14 Euro –, each receive 18 Euro (60% of 30 Euro) from the project. Note that everybody individually decides how much to invest and that the invested amount may differ between group members. The income from the project, however, will always be the same for all group members – i.e., 60% of the whole jointly invested pool.

Total income: Your total income is the sum of your incomes from the separate account and the joint project and, thus, the money you have put into the account plus sixty percent of the sum of all group members' investments into the project.

This setting applies to ALL parts of experiment. The parts, however, differ with respect to the order of decision-making. After the experiment, four groups will be randomly selected, with each three participants; two groups will play according to decision rules of part *a* and two groups will play according to decision rules of part *b*.

In **part *a***, all group members decide upon their investments WITHOUT knowing what the others do.
In **part *b***, one randomly selected member of the group gets a special role. While the two other members decide without knowing what the others do, the selected member decides conditional on what the others do. His or her decision will look like the following: "If the others invest xx Euro, then I will invest … Euro."

(On the following pages, we ask for your investment decisions for the different parts. Note that the parts do not necessarily show up in the alphabetical a-b sequence, as for some people *b* may show up before *a*.)

APPENDIX A2: THE DECISIONS

Instruction for unconditional contribution
You are in a project group where all three-group members decide about their investments into the joint project without knowing what the other group members invest.

Please indicate your investment into the project. Note that you can only invest full amounts of Euros – that is, 0, 1, 2 until 19 or 20 Euro; you are not allowed to invest, e.g., 11.50 Euro or 5.33 Euro. If you write such values, we will round them to the next Euro value; 0.5 will be rounded upwards.

I will invest the following sum: ……….. €.

Instruction for conditional contribution
You are in a group of three players in total, where there is one player selected to be able to condition his or her investments on the other group members' average investment. Assume that <u>you are the member with this special role</u>.

For each possible average investment of the other two group members, please indicate below your investment into the joint project. Note that you can only invest full amounts of Euros – that is, 0, 1, 2 until 19 or 20 Euro; you are not allowed to invest, e.g., 11.50 Euro or 5.33 Euro. If you write such values, we will round them to the next Euro value; 0.5 will be rounded upwards.

<u>If I am the group member who can condition</u> her or his decision on the other group members' average contribution, then I will invest the following sum …

Others' average investment	Your investment	Others' average investment	Your investment
0.00 €	……….. €	10.00 €	……….. €
⋮		⋮	
9.50 €	……….. €	19.50 €	……….. €
		20.00 €	……….. €

Instruction for those in conditional contribution who cannot condition
You are in a group of three players in total, where there is one player selected to be able to condition his or her investments on the other group members' average investment. Assume that you are <u>not </u>the member with this special role.

Please indicate your investment into the joint project. Note that you can only invest full amounts of Euros – that is, 0, 1, 2 until 19 or 20 Euro; you are not allowed to invest, e.g., 11.50 Euro or 5.33 Euro. If you write such values, we will round them to the next Euro value; 0.5 will be rounded upwards.

If I am one of the two the group members who <u>cannot</u> condition her or his decisions on the other group members' average contribution, knowing that one of the other two group members can condition his or her decision on my investment, then I will invest the following sum: ……….. €**.**

APPENDIX A3: CONTROL QUESTIONS

Please answer the following questions. They should help you to get acquainted with how to determine your income in this experiment. Please answer every question and provide the complete calculation.

1. Assume that everybody in the group (including you) does <u>not invest anything</u> into the joint project.
   a) What is your total income?   ....
   b) What is the other group members' total income?   ....
2. Assume that you invest 20 Euro and that the other two group members also invest each 20 Euro in the joint project.
   a) What is your total income?   ....
   b) What is the other group members' total income?   ....
3. Assume that the other two group members each invest 15 Euro into the joint project.
   a) What is your total income if you – in addition to the others' investments – invest nothing into the joint project?   ....
   b) What is your total income if you – in addition to the others' investments – invest 8 Euro into the joint project?   ....
   c) What is your total income if you – in addition to the others' investments – invest 15 Euro into the joint project?   ....
4. Assume that you invest 8 Euro into the joint project.
   a) What is your total income if the others – in addition to your investments – together invest 6 Euro into the joint project?   ....
   b) What is your total income if the others – in addition to your investments – together invest 12 Euro into the joint project?   ....
   c) What is your total income if the others – in addition to your investments – together invest 17 Euro into the joint project?   ....
   d) What is your total income if the others – in addition to your investments – together invest 22 Euro into the joint project?   ....
5. Please evaluate the following statements and mark the correct option associated with each statement.
   a) If I increase my investment into the joint project by 1 Euro, then <u>my</u> total income …
      [ ] always increases by 0.60 Euro
      [ ] always decreases by 0.40 Euro
      [ ] always decreases by 1.00 Euro
      [ ] may increase or deceasing depending on what the other two group members do.
   b) If one of the other group members increases her or his investment into the joint project by 1 Euro, then <u>my</u> total income …
      [ ] always increases by 1.00 Euro
      [ ] always increases by 0.60 Euro
      [ ] always decreases by 0.40 Euro
      [ ] may increase or deceasing depending on what I and the remaining group member do.

Once all have answered the questions, the experimenter will provide the correct answers to each question and is available to further explain the rules.