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The Power of We: Evidence for Group-Based Control

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## Abstract

Membership in social groups may restore people's sense of global control when *personal* control is questioned. Therefore, ethnocentric tendencies might be increased as a consequence of personal control threat. Testing hypotheses derived from a novel model of group-based control in five experiments, we show that making lack of personal control salient increased ingroup bias and pro-organizational behavior (Studies 1 - 5). These effects were independent of parallel effects of uncertainty (Study 2) and most pronounced for highly identified group members (Study 3). Studies 4 and 5 lend support to the assumption that perceiving the ingroup as a unitary actor is critical for symbolic control restoration: Threat to collective homogeneity and agency catalyzed the effect personal control threat had on ingroup support and defense. These findings complement previous research on motivated intergroup behavior and socio-cognitive strategies to cope with deficits in personal control.

## The Power of We: Evidence for Group-Based Control

Humans are both helpless and almighty. They are at the mercy of fate and nature, as most individual outcomes and achievements are dependent on external forces. They are not able to protect themselves from strokes of fate, such as losing a partner, becoming unemployed, suffering chronic disease, or even their own death. On the other hand, humans have great potential. People have the ability to mentally move through space and time, to generate goals of high ambition and to pursue them in a coordinated manner. Humans have the potential to travel the moon, to sustain a global civilization, and even to understand their own psyche. These enormous abilities are reflected in – and perhaps also catalyzed by – people's exaggerated beliefs of being in control over their physical, mental, and social environment (e.g., Langer, 1975). However, this basic sense of global control that imbues people's thinking in everyday life can be deeply shaken when people reflect on their insufficiencies to ultimately control the very basic conditions of their life, such as social inclusion, physical health, or their very existence.

People may try to prevent threats to implicit beliefs in personal control by turning to one of the most important sources of human potency: the group. Humans were able to conquer the world due to their capacity to form shared intentionality and meaningful social groups and institutions (e.g., Tomasello, 2009). The ability to think in terms of “we” instead of “I” has opened the door to collective efficacy and unique collective achievements, such as the creation of great buildings like the Great Wall of China or medieval cathedrals which needed generations of builders to come into existence. Many researchers maintain that it is an individual's position within the group that determines her or his evolutionary fitness rather than her or his ability to directly interact with nature (e.g., Brewer & Caporael, 2006) and some authors have defined power and control as an individual's ability to recruit *collective* agency in the service of her or his own agenda (Simon & Oakes, 2006; Turner, 2005).

In the present article, we test hypotheses derived from a novel model of group-based control, stating that people may uphold their basic sense of global control through highlighting group membership and acting as a group member. Specifically, in times when people reflect on the ultimate boundaries of their personal control over important aspects of their life, group membership might become crucial. Then, people may tend to prefer definitions of the self in terms of “we” instead of “I” and act as a group member instead of acting as an individual person. As a result, threat to personal control may increase ethnocentric tendencies in people, such as ingroup support and favoritism and – at times – outgroup derogation. We will outline the model in more detail and present a set of five studies conducted to provide first evidence for processes of group-based control restoration to occur.

#### Control Motivation

People have a basic desire to perceive important events in their environment as contingent on the will and actions of their self (e.g., Pittman & Zeigler, 2007; Skinner, 1996; White, 1959). In addition, the ideal of agency (to be an agent instead of an object) seems to guide the way in which people construe their self (Preston & Wegner, 2005). Empirical evidence for the importance of control perceptions comes from research showing that people often experience illusions of control in objectively uncontrollable situations such as when drawing lottery tickets (Langer, 1975). Furthermore, perceptions of control and autonomy seem to be essential for human functioning and equanimity as they have been found to increase variables such as well-being, performance, positive emotions and self-esteem (for an overview see Skinner, 1996). Perceptions of *lacking* control in turn increase anxiety and depression (Skinner, 1996).

People are not only motivated to have control in specific situations but also desire a sense of global control generalized over self-relevant events and outcomes (Thompson, 1993). If objective control is restricted individuals might try to re-establish control either in primary or in secondary ways (Rothbaum, Weisz & Snyder, 1982). Individuals striving for primary

control seek to control the desired outcomes themselves. Secondary control strivings are described as more indirect means of (re-) gaining a sense of control (Skinner, 2007). For example, in processes of vicarious control (Rothbaum et al., 1982) people affiliate with powerful *others* who are assumed to influence outcomes in the desired direction. We propose self-definition as a group member to be an alternative way to restore or maintain perceptions of global control, as here control is exerted through the (social) self and *not* by others.

#### Groups and the Restoration of Control

In research on social identity (Tajfel & Turner, 1979) and self-categorization (Turner, Hogg, Oakes, Reicher & Wetherell, 1987) it has been demonstrated that group memberships serve people to define their self. That is, group attributes and actions may become attributes and actions of the self when people identify with a social group (self-stereotyping; Hogg & Turner, 1987). The social identity approach has emphasized the desire for positive evaluation of the self laying the ground for ingroup identification and ingroup bias. However, recently, some authors have argued that social identity is also related to power and control (Simon & Oakes, 2006; Turner, 2005). These authors stress that “a person or group has power insofar as it recruits human agency in the service of its agenda” (Simon & Oakes, 2006; p. 113). Turner (2005) argues that shared social identities lay the unique foundation of exerting control through others as this kind of power “only emerges from human social relationships, from the capacity of people to organize themselves into groups, institutions, and societies.” (p. 6).

In contrast to interdependence approaches to group formation (e.g., Sherif, 1966), Turner (2005) and Simon and Oakes (2006) propose that it is *not realistic dependency* which determines group formation and group life. They rather suggest that existing social identities lay the ground for mutual influence among people which in turn leads to the emergence of power and resource control through others. We may add that although group formation might sometimes occur along the lines of shared realistic interests and mutual positive interdependence (Sherif, 1966), realistic interdependence is not sufficient to explain why

group membership should have the capacity to restore and maintain a subjective sense of global control. This is because receiving support from others within the group might be a double-edged sword if people want to perceive the *self* (and not others) as having control. This is why we think that social identity rather than mere group membership should be critical for group-based control restoration. Specifically, we propose that people who perceive low personal control may prefer to define their self via the ingroup and act as an ingroup member because this might maintain perceptions of power and control exerted through the (social) self.

There is preliminary evidence for processes of group-based control restoration to occur through the enactment of social identity. Guinote, Brown, and Fiske (2006) demonstrated that social identity as a group member influences individuals' perceptions of control. People who were made to believe that they belonged to a majority group in society anticipated more control in a following group discussion task than those who believed they were part of a minority group. Given the impact of group membership on perceptions of control, people should be motivated to perceive their group as having control. Accordingly, Vignoles, Regalia, Manzi, Gollidge, and Scabini (2006) conclude that control motivation is one of various distinct motives that determine identity construction on the individual as well as the group level of the self. The tendency to perceive the ingroup as a unitary actor is also evident in research on group entitativity. Here, social categories are perceived as groups or "real" entities when these can be ascribed both homogeneity and agency (Brewer, Hong & Li, 2004).

#### *Motivational Explanations of Intergroup Behavior*

In the intergroup literature control motivation has been largely ignored as an independent source of intergroup and ethnocentric behavior. Instead, related, but conceptually distinct, motives have received considerable attention (for an overview see, for instance, Hewstone, Rubin & Willis, 2002). Uncertainty reduction theory (Hogg, 2007) maintains that

defining the self in terms of the ingroup may reduce uncertainty about the self as people can infer characteristics of the self from the ingroup stereotype (self-stereotyping). Findings that ingroup bias is increased under conditions of personal uncertainty (e.g., Grieve & Hogg, 1999) support this approach (for related positions see Kruglanski, Pierro, Mannetti & De Grada, 2006; van den Bos, 2009).

In a different influential line of research, Greenberg, Solomon & Pyszczynski (1997; see also Castano & Dechesne, 2005) have proposed ingroup bias to be rooted in the self-preservation motive. According to terror management theory, defining the self as a group member means to define the self via a death-transcendent entity which is assumed to buffer the potential terror elicited by the awareness of human mortality (Castano, Yzerbyt, Paladino & Sacchi, 2002). In addition, ingroup favoritism has been argued to indicate people's efforts to validate death-transcendent cultural worldviews that – together with personal self-esteem – give people a sense of symbolic immortality (Harmon-Jones, Greenberg, Solomon & Simon, 1996). A host of evidence that people exhibit more ingroup bias after having been induced to think about their personal death (e.g., Castano et al., 2002; Giannakakis & Fritsche, 2011; Harmon-Jones et al., 1996) seems to support the terror management approach.

Recently, Fritsche, Jonas, and Fankhänel (2008) advocated an alternative explanation of mortality salience effects in terms of control restoration. Death is one of the most clear-cut metaphors for a global lack of personal control, and therefore, reactions to death salience might basically represent processes of control restoration rather than self-preservation. In line with this notion, the authors found that a classical death salience treatment increased implicit control motivation. In addition, effects of mortality salience were eliminated when people were reminded of partial control over their own death (self-determined death or suicide salient) and an orthogonal manipulation of death salience and control salience revealed only an effect of control salience on support for a preferred political party. Processes of group-based control may explain these findings.

The increasing interest in social behavior responses to control threat is also expressed in work by Kay and colleagues (Kay, Gaucher, Napier, Callan & Laurin, 2008; see also Kay, Whitson, Gaucher & Galinsky, 2009; Kay, Shepherd, Blatz, Chua & Galinsky, 2010) who demonstrated that reminding people of lacking control over positive events increased the justification of the political and economic system of people's own country and the belief in a controlling God. Rutjens and Loseman (2010) conceptually replicated the former finding by showing that the induction of low self-control capacity also increased tendencies toward system justification. As an explanation of their findings these authors suggest that people need to shield themselves from the idea that the world is an unpredictable and chaotic place which might be elicited by perceptions of low personal control. Therefore, the belief in powerful agents of control (e.g., God) or that the world is just may compensate for lacking control through the self.

We concur that a lack of personal control may elicit efforts to increase a sense of predictability and certainty (Kay et al., 2008, 2009, 2010; Rothbaum et al., 1982; Van den Bos, 2001). However, we think that people's foremost concern under conditions of control threat is to establish that the world is controlled by *their self* and not by some external agent. That is, from the perspective of the group-based control account, and in line with previous findings by Fritsche et al. (2008) after threat to personal control people should be most inclined to support and defend the personal or the social self (i.e., the social ingroup). Systems might be supported most if they are the system of the ingroup (e.g., the political system of *one's own* state or culture, for example the US) but less so if they characterize the outgroup (e.g., the traditional political system of a different state or culture, for example China).

#### *A Model of Group-Based Control*

We unite previously disparate findings in one cogent framework – a model of group-based control. It provides a novel account of motivated collective behaviour and of the role group membership plays in restoring or maintaining perceived control when a global sense of

control is threatened. At the core of this model lies the assumption that people think and act in terms of group membership as an attempt to restore or maintain a sense of global control through the self. Defining the self in terms of a social ingroup can serve the restoration of a global sense of control as people heuristically think of groups as actors (Brewer et al., 2004). Specifically, groups should be perceived as agents who act in line with goals and values (agency) that are shared among group members (homogeneity)<sup>1</sup>. Therefore, we assume that people are inclined to think and act as group members or in terms of “we” instead of “I”, in response to limitations of their personal control. This may restore a global sense of control through the (social) self.

Some specific predictions that can be derived from a model of group-based control are displayed in Figure 1. Path (a) illustrates that as a reaction to threats to their global sense of control people are assumed to behave in a manner that supports or defends the ingroup. However, collective responses to control threats are assumed to depend on self-categorization and identification as a group member (Path b) which should be determined by both the actual social context and a person's individual readiness to adopt a specific social identity (see Bruner, 1957). Although threat to control may increase the initial readiness to identify with social ingroups and may elicit an active search for “available” social identities, it should be the case that collective reactions to lacking control occur when group membership is already salient in a situation (e.g., people who enter a football stadium and find themselves as a supporter of one of the two teams) or people already identify with a specific group (e.g., the home team).

Path (c) directs attention to collective threat as a second moderating variable. Collective threat has been shown to increase ethnocentric behaviour such as ingroup bias and prejudice (Branscombe, Ellemers, Spears & Doosje, 1999; Riek, Mania & Gaertner, 2006). We propose that threats to ingroup homogeneity and agency can facilitate the effects of threat

<sup>1</sup> Note that according to this definition actual success in goal attainment is *not* necessary for ascribing agency to a group, although, it might be one of its most prominent indicators.

to personal control on ethnocentric reactions in people highly identified with their ingroup. This is because ingroup homogeneity and agency form the bases of collective control and therefore constitute the basic conditions for group membership to restore a sense of global control. Thus, people who feel both low personal control as well as low ingroup homogeneity and agency may appraise this situation as double threat. This should result in particularly intense reactions of ingroup support and defense which might serve to re-establish collective control, at least in a symbolic sense<sup>2</sup>.

#### The Present Research

The present research has been set up to test some predictions derived from the model of group-based control. Specifically, we tested the hypotheses (a) that reminding people of low personal control increases ingroup bias and ingroup support and that this effect is exaggerated (b) for people who are highly identified with the ingroup, and (c) when ingroup homogeneity and agency are threatened. We also intended to empirically distinguish the effects of control threat from possibly related effects of self-concept uncertainty.

First we will present two related experiments (Studies 1 and 2) testing the impact of control salience on ingroup bias (Path a). To manipulate control salience we reminded participants of the possibility of becoming unemployed and varied the degree of perceived control over becoming unemployed or not. In Study 2 we added an orthogonal manipulation of uncertainty/certainty salience to test whether threat to control effects are independent of the effects of uncertainty. This study also explored the role that perceived intergroup cooperation plays for control salience effects on ingroup bias to occur.

In Study 3 we tested the hypothesis that lack of control salience increases ingroup bias only for those people who are highly identified with their ingroup (Path b). Here, we used a straightforward manipulation of control salience, asking participants either to describe those

<sup>2</sup> Note, that double threat to both personal and collective control may also lead to decreased ingroup defense or neutral responses when people are lowly identified with their ingroup and alternative social identities are available (Ellemers, Van Knippenberg, De Vries & Wilke, 1988; Spears, Doosje & Ellemers, 1997).

aspects of their lives that made them feel in control or those that made them feel not in control. We measured both national ingroup identification and ingroup bias in relation to two national outgroups.

Studies 4 and 5 investigated the role of collective threat to ingroup homogeneity and agency for moderating the effects of control salience on ingroup bias and ingroup support (Path c). In these studies we manipulated not only personal but also collective threat to control. As a manipulation of collective threat, we used false feedback about the homogeneity of an artificially created ingroup in Study 4 and manipulated the salience of high or low global agency of a natural ingroup in Study 5.

#### Study 1

In Study 1 we investigated the basic effect of global control perceptions on ingroup bias, proposed in the model of group-based control (see Figure 1, Path a). One major threat to general control is facing long-term unemployment (e.g., Layton, 1987). This might refer both to being unemployed, which should result in restrictions of control in various areas of life, as well as realizing that one has far less than full control over becoming unemployed or not. At the time our studies took place, unintentional long-term unemployment was a major topic in public discourse and was perceived as one of the major threats in German society (Bulmahn, 2004). Hence, we used an unemployment scenario to induce lack of control salience. To keep as many features of the situation constant as possible we varied the degree of control one has over becoming long-term unemployed. As a dependent variable we used an ingroup bias measure in which we asked our East and West German participants to rate both groups on positive and negative attributes.

#### Method

*Participants and Design.* Fourteen women and 13 men with an average age of 24.04 ( $SD = 4.11$ ) participated in our questionnaire study on the campus of an East German university in September 2004, receiving as compensation EUR 3. Twenty-two participants

were born in East Germany and three in West Germany. Two participants were born outside Germany but one had lived in East Germany since the age of one and the other was of German ethnicity and had lived in East Germany for 12 years. We included both participants as East Germans. One participant who refused to fill out the adjective ratings was excluded from the final sample. The resulting sample comprised of 23 East and three West Germans.

The study had a one-factorial design (no control salient/ control salient) with ingroup bias in evaluations of East and West Germans as dependent variable.

*Procedure and Materials.* Participants were told that the experimenters were interested in social information processing and the effects of perspective-taking on text recognition. In the first task they were asked to take the perspective of the protagonist in a case report from a large German newspaper. Specifically, they were asked to “imagine most precisely what the person thinks and feels in the described situation.” It was announced that later on they would have to answer some recognition questions. As the case report was designed to elicit the salience of self-relevant threat to control the protagonist and her life situation generally matched the characteristics of a young student population<sup>3</sup>. All participants read an article about a well-qualified female academic named Maren Maurer who suffered from long-term unemployment. After describing her experiences the text reported on the increasing number of unemployed academics in general.

Participants were randomly assigned to one of two versions of the case report. In the no control salient condition the article was titled “Unemployed Academics: Time of Insults” and the first paragraph of the article stated that Maren Maurer had been fired when her company was closed two years ago. In the control salient condition the heading was “Unemployed Academics: Decisions with Far-Reaching Consequences” and Maren Maurer found herself long-term unemployed after she had quit her job to take time out in order to think about what she wanted from life. In both conditions, failing to find employment again

<sup>3</sup> Although gender of the target person and participant were not matched, participant gender had no effect on our dependent variables. We conclude that the perspective-taking task worked for both men and women.

was described as being basically aversive and unintended. Therefore, conditions differed only with regard to why Maren Maurer initially lost her last job but not with regard to experiencing failure.

The reading task was followed by the German version of the Positive and Negative Affect Schedule (PANAS; Watson, Clark & Tellegen, 1988; Krohne, Egloff, Kohlmann & Tausch, 1996), measuring positive ( $\alpha = .86$ ) and negative ( $\alpha = .89$ ) mood on ten five-point rating items (from 1 = “not at all” to 5 = “absolutely”). As mood values were not affected by the manipulation, all  $ps > .60$ , we did not include mood in the analyses.

To check for the impact of the manipulation the participants answered some questions about the previous text, including (1) “To what extent are external circumstances (e.g., economic situation etc.) responsible for Maren Maurer’s current situation?” (reversed), (2) “To what extent is Maren Maurer responsible for her current situation?”, (3) “To what extent has Maren Maurer decided on her current situation?”, (4) “To what extent is Maren Maurer the master of her own fate?” All ratings were made on ten-point scales from “not at all” (1) to “very much” (10),  $\alpha = .66$ .

Following a filler questionnaire on sleeping and waking patterns<sup>4</sup>, we told our participants that we were now interested in their personal judgments and perceptions in different areas. To increase their willingness to judge East and West Germans we first provided a warm-up attribute-rating task where we asked the participants to indicate to what extent members of different professional groups (office administrators, hair-dressers, police officers, nurses) were characterized by each of four different positive and negative attributes. Following this warm-up task we asked participants to rate 32 attributes on how well they described East and West Germans on ten-point scales from “not at all” (1) to “very much” (10). Order of target groups was counterbalanced. To increase participants’ readiness to make

<sup>4</sup> We added the filler questionnaire as other research indicates that the effects of self-threats are most pronounced after a delay (Arndt, Cook & Routledge, 2004; Wichman, Brunner & Weary, 2008).

generalized judgments across group members and to differentiate between groups the adjectives had been chosen from a pool of pre-tested adjectives to represent attributes that are stereotypical for East Germans (e.g., helpful, uncertain) or West Germans (e.g., eloquent, know-all) which were added to other attributes that were not relevant to either stereotype (e.g., appreciative, stupid). We computed a composite ingroup bias score by recoding negative ingroup and positive outgroup attribute ratings for both East and West German participants separately and then computing the mean,  $\alpha = .80^5$ .

The remaining questions collected socio-demographic information. Following these, participants were fully debriefed and thanked for their participation.

### Results

As exploratory analyses indicated that participants in the no control salient condition tended to be older than those in the control salient condition ( $M = 25.73$ ;  $SD = 5.06$  vs.  $M = 22.88$ ;  $SD = 2.94$ ),  $F(1, 25) = 3.44$ ;  $p < .08$ , we entered this variable as a covariate in all of the following analyses to make sure that the hypothesized effects of control salience were not due to age differences. As there was no effect involving order of presentation of East and West German descriptions we skipped this factor from the analyses. We excluded one outlier (studentized residual  $< -2.5$  for ingroup bias) from the analyses.

*Manipulation Check.* We calculated a one-factorial ANCOVA with control salience as a factor and age as covariate on amount of control ascribed to Maren Maurer. There was a significant main effect of the manipulation, which revealed decreased perceptions of control in the no control salient condition ( $M = 3.48$ ;  $SE = 0.59$ ;  $n = 9$ ) compared to the control salient ( $M = 5.73$ ;  $SE = 0.43$ ;  $n = 16$ ) condition,  $F(1, 22) = 8.48$ ,  $p = .008$ ,  $\eta^2 = .28$ . This speaks for the success of our manipulation.

<sup>5</sup> We collapsed ingroup/outgroup ratings across East and West German participants as we did not expect any systematic differences in effects due to participant group. Unfortunately, low numbers of West Germans in the present sample did not allow for a test of this underlying assumption.

*Main Analysis.* We submitted the ingroup bias scores to a 2 (no control/control salient) x 2 (ingroup bias on ingroup ratings/on outgroup ratings) ANCOVA with repeated measures on the second factor and age as covariate. As predicted, we found an effect of control salience on ingroup bias,  $F(1, 22) = 9.84$ ,  $p = .005$ ,  $\eta^2 = .31$ , indicating greater bias in the no control salient condition ( $M = 6.27$ ;  $SE = 0.15$ ) than in the control salient condition ( $M = 5.65$ ;  $SE = 0.11$ ).

### Discussion

In Study 1 we found that people for whom lack of control was salient demonstrated increased ingroup bias, presumably in an attempt to restore or maintain a sense of global control through the self by investing in a self-defining group. This initially supports the model of group-based control (see Figure 1, Path a). The results further indicate that effects of control salience on ingroup bias previously demonstrated in the context of death (Fritsche et al., 2008) can be generalized across different domains of potential threat to people's sense of global control. In the following studies we aimed at replicating the effect of control salience on ingroup support and defense and at specifying its boundary conditions.

### Study 2

In Study 2, we wanted to test whether the effect of control salience is independent of a possible effect of uncertainty. Uncertainty in relation to the self has been found to increase ingroup bias in previous research by Hogg (2007) and Van den Bos (2009). At the same time, in everyday life, perceived uncertainty should often be negatively correlated with perceptions of control (Baker & Stephenson, 2000) although, conceptually, both constructs are independent (i.e. a person who is low in perceived control can at the same time be absolutely certain about herself and someone who perceives having a lot of influence on his environment can be uncertain about who he really is). Thus, establishing control as a novel explanation of ingroup bias requires demonstrating that the proposed effects of control operate independent of self-concept uncertainty. We thus manipulated both control salience and self-concept



uncertainty/certainty salience in one orthogonal design, testing competing hypotheses. In case the effects of control are just a special case of uncertainty salience effects, we expected an interaction of both factors, indicating increased ingroup bias following control threat only when uncertainty threat is high but not when certainty is made salient. Instead, independent main effects of control and uncertainty salience had to be expected if we were right in suggesting that control threats work independently of uncertainty/certainty salience.

Furthermore, we were interested in exploring the role salient intergroup cooperation plays in control salience effects on ingroup bias. According to the model of group-based control, people who experience threat to control are expected to support their ingroup. However, ingroup bias means to support one's own group at the expense of an outgroup which is not always necessary for – or may even oppose – the goal of ingroup support. If intergroup cooperation is salient then ingroup bias may not be the appropriate way to bolster the ingroup. Therefore, salient intergroup cooperation might reduce the effect of threat on ingroup bias. We tested this in the context of the categorization into East vs. West Germans. The study took place in November 2009, close to the 20<sup>th</sup> anniversary of the fall of the Berlin wall which is known as the most prominent symbol for the fraternization of East and West Germans and the German re-unification which followed less than one year later. In advance to this anniversary broad media coverage in Germany had pushed the remembrance of these historic events in public. This should have made cooperation between East and West Germans salient, at least for some people. Thus, we measured people's subjective awareness of the fall of the Berlin wall and explored whether this would reduce the proposed effects of control and uncertainty on East-West ingroup bias.

#### *Method*

*Participants and Design.* Sixty-three women and 30 men with an average age of 21.20 ( $SD = 2.27$ ) who could be clearly classified as East ( $n = 73$ ) or West ( $n = 20$ ) Germans<sup>6</sup> were recruited at the campus of an East German university in early November 2009. Participants received a chocolate bar as compensation. We had to exclude one person from the final sample who indicated having participated in about 20 similar studies during the last six months, one person who explicitly refused to judge East and West Germans comparatively, and nine people who had some idea about the true purpose of the study (indicating that it was on investigating threat/anxiety or the relation between threat and intergroup judgments)<sup>7</sup>. Eighty-two participants remained in the final sample.

The study had a 2 (high control salient / low control salient) x 2 (uncertainty salient / certainty salient) x (awareness of the fall of the wall) design with ingroup bias, ingroup identification, and perception of ingroup entitativity as dependent variables.

*Procedure and Materials.* All participants agreed to participate in a survey study on societal problems and social perception. Participants were given perspective-taking instructions similar to those used in Study 1 and then read four paragraphs about Stefan Müller, a young male academic suffering long-term unemployment. The overall story strongly resembled the case report from Study 1. Participants were randomly assigned one of four different versions. Similar to Study 1, in the low control condition it was explained that the protagonist had been laid off, whereas in the high control condition he was described as having quit the job due to personal reasons.

For the manipulation of uncertainty salience it was stressed in the uncertainty condition that the target's departure from his last job had been related to uncertainty about whether his personality would fit with the job. Furthermore, it was described that after

<sup>6</sup> The participants in this study were taken from a larger sample of 115 people of which 22 persons could not be classified unambiguously as East or West Germans (because they had been living at the place of their birth for less than 15 years or had indicated Berlin as the place of their birth without specifying the part of Berlin).

<sup>7</sup> In the weeks before this investigation some other studies on similar topics had taken place on campus. This might explain the comparatively high number of people who guessed the true purpose of the study.

becoming unemployed the target “did not know who he was and what his strengths and weaknesses were. His own image about his person was faded and blurred. He always wondered about his abilities and his competences.” In the certainty condition the target’s departure from his last job had nothing to do with his abilities or competencies and it was stated that “he was still certain about who he actually was and what his strengths and weaknesses were. Being unemployed did not change his own image about his person which still remained clear and distinct.”

After reading the text participants responded to a set of items that assessed the success of the control salience and uncertainty salience manipulations. Participants were asked to indicate how well different statements described what they would feel if they were in the same situation as Stefan Müller. In this study all ratings were made on seven-point scales ranging from 1 (“not at all”) to 7 (“very much”). To measure perceptions of control we used the same four items from Study 1, but reworded to take the first-person perspective,  $\alpha = .70$ . Perceptions of uncertainty were measured by five items: “How much are you puzzled about your strengths and weaknesses?”, “How much does this situation make you uncertain?”, “How much did your own image of yourself began to sway?”, “How much did you feel uncertain about your own identity?”, and “How much do you have your doubts about your own person?”,  $\alpha = .87$ .

After a filler questionnaire identical to that used in Study 1 we explained that even 20 years after the fall of the Berlin wall there still might be differences between East and West Germans and asked the participants to complete ratings of East and West Germans<sup>8</sup>. They rated East ( $\alpha = .88$ ) and West Germans ( $\alpha = .81$ ) (presented in counterbalanced order) on ten positive traits: “Honest”, “competitive”, “competent”, “likeable”, “determined”, “good-

<sup>8</sup> Before completing the ingroup bias measure the participants worked on five and a seven item measures of ingroup identification and entitativity. For these measures no significant effects of the independent variables occurred, all  $ps > .05$ .

natured”, “ambitious”, “warm”, “trustworthy”, and “independent”. We computed a composite ingroup bias score by subtracting outgroup ratings from ingroup ratings.

Finally, we collected socio-demographic data and before debriefing, thanking, and releasing participants we asked participants how much they were “aware of the events of the fall of the wall” on a seven-point scale (from 1 = “not at all” to 7 = “very much”).

### Results

*Manipulation Check.* Independent 2 (high control/low control salient) x 2 (high uncertainty/low uncertainty salient) ANOVAs for the manipulation check measures of control and uncertainty revealed that the manipulations were successful. For the measure of control the only main effect we found was an effect of the control manipulation,  $F(1, 78) = 12.52, p < .001, \eta^2 = .14$ ; perceptions of control were higher in the high control ( $M = 4.41; SD = 0.97; n = 46$ ) compared to the low control ( $M = 3.76; SD = 0.81, n = 36$ ) condition. The manipulation of uncertainty/certainty did not have a main effect on measured control,  $F(1, 78) = 0.29, p = .59, \eta^2 = .004$ , and the interaction of control and uncertainty salience was not significant,  $F(1, 78) = 2.94, p = .09, \eta^2 = .04$ .

For the measure of uncertainty the only effect was a main effect of the uncertainty salience manipulation,  $F(1, 78) = 4.33, p = .04, \eta^2 = .05$ , all other effects  $ps > .41$ . Perceptions of uncertainty were increased in the uncertainty salience ( $M = 4.50; SD = 1.33; n = 42$ ) compared to the certainty salience ( $M = 3.89; SD = 1.34; n = 40$ ) condition. The measures of control and uncertainty were not correlated,  $p > .24$ .

*Main Analysis.* We used multiple regression analysis with interaction tests (Aiken & West, 1991) including control salience (-1 = low control; +1 = high control), uncertainty salience (-1 = certainty; +1 uncertainty), and the awareness of the fall of the Berlin wall (centered), as well as all possible two-way and three-way interactions of these variables as predictors of ingroup bias. After eliminating outliers (studentized residuals  $< -2.0$ ) 77 participants remained in the analysis.

The analysis revealed no main effects, all  $ps > .15$ , but a two-way interaction of control salience and awareness,  $b = .08$ ,  $t(76) = 2.14$ ,  $p = .04$ ,  $\beta = .26$ . Simple slope analyses indicate that for those participants who were not very much aware of the fall of the wall (-1 SD), the salience of low control increased ingroup bias,  $b = -.19$ ,  $t(76) = -2.04$ ,  $p = .046$ ,  $\beta = -.35$ , however, no effect of control salience occurred when awareness was high (+1 SD),  $b = .09$ ,  $t(76) = 0.97$ ,  $p = .33$ ,  $\beta = .16$ . For uncertainty salience, a similar pattern was observed. We found a two-way interaction of uncertainty and awareness of the historic events,  $b = -.09$ ,  $t(76) = -2.48$ ,  $p = .02$ ,  $\beta = -.29$ . Uncertainty increased ingroup bias when awareness was low,  $b = .20$ ,  $t(76) = 2.11$ ,  $p = .04$ ,  $\beta = .37$ , but had no effect when awareness was high,  $b = -.12$ ,  $t(76) = -1.38$ ,  $p = .17$ ,  $\beta = -.23$ . No other interaction effects were observed, all  $ps > .22$ . Both interactions are displayed in Figure 2.

#### *Discussion*

In Study 2 we replicated the findings of Study 1 showing that lack of control salience increased ingroup bias in East- and West Germans as the model of group-based control suggests (see Figure 1, Path a). Furthermore, we were able to demonstrate that the effect of control salience was independent of a parallel effect of uncertainty salience. As predicted by uncertainty reduction theory (Hogg, 2007), ingroup bias was increased following reminders of uncertainty. Both threats to control and threats of uncertainty seem to affect ingroup bias but they do not interact. This renders an alternative – uncertainty based – explanation of control salience effects on ingroup bias unlikely. If the control salience effects were due to the fact that lack of control may have increased uncertainty, an interaction would have been expected. Specifically, the effects of control salience should have been reduced when certainty was made salient.

To preclude the possibility that the independent effect of control salience may have been due to increased self-concept uncertainty as a consequence of threatened personal control, it is important to check whether the experimental manipulation of personal control

elicited uncertainty. Supporting the independence assumption manipulation checks revealed that the control manipulation had an effect on perceived control but did not affect ratings of uncertainty. Thus, the independent effect of control salience supports the notion that threats to personal control can elicit defensive collective reactions which can not be attributed to the effects of self-concept uncertainty.

The effects of control salience and uncertainty salience were both moderated by participants' awareness of the fall of the wall twenty years ago. The salience of cooperation between groups (in this case between East and West Germans) ameliorated the adverse effects of control and uncertainty-related threats on ingroup bias. This sheds some light on the conditions under which ethnocentric reactions to threat may result in the relative devaluation of outgroups. In line with the notions of group-based control, supporting the ingroup is of primary importance under conditions of threat. Relative outgroup derogation might just be one means among others to increase ingroup welfare, and then only sometimes. Our data support this view: When people reflected on intergroup cooperation, derogating the cooperating outgroup would not have been in the service of ingroup welfare but instead, may have hampered ingroup goal pursuit. Thus, under conditions of salient cooperation people did not increase ingroup bias as a response to threat.

As a second – related – possible explanation of the moderating effect of awareness of the fall of the wall is that the historic events may have triggered a common ingroup for East and West Germans. Gaertner and Dovidio (2000) have illustrated that re-categorizing ingroup and outgroup on the level of a superordinate, common ingroup improves intergroup attitudes and Giannakakis and Fritsche (in press) recently added that the salience of a common ingroup ameliorated the adverse effect of personal threat on bias in outgroup evaluation. Thus, awareness of the fall of the Berlin wall might have eliminated the effects of threat by making the common national ingroup salient. It is up to future research to determine the relative

impact that perceived intergroup cooperation and perceptions of a common ingroup may have on threat effects on intergroup attitudes.

### Study 3

Study 3 aimed to replicate the basic effect of control salience on ingroup bias demonstrated in Studies 1 and 2. Whereas in the two previous studies salience of control was manipulated in the context of unemployment threat, we now aimed to manipulate perceptions of control in a context-free manner. Furthermore, we wanted to replace the perspective-taking paradigm with an activation of idiosyncratic memories of uncontrollability. We also changed the intergroup context from intra-national to international, gathering field data at the European Football Championship in Austria and Switzerland 2008 (EURO 2008). In this special context intergroup relations and national identity should be particularly salient and important at least for some of those people who watch the international matches and cheer their national team. However, others might be less identified and are just attracted by the high publicity of the event of an international tournament of prime public and media attention. Following the model of group-based control, salient lack of control should only increase ingroup bias for those who were highly identified with their nation during the tournament (See Figure 1, Path b).

We asked Austrians, Croatians, and Germans on public places in the cities in which the matches of their national teams had taken place either to list those aspects of their life that made them feel most influential and powerful (high control salience) or those that made them feel least influential and most powerless (low control salience). After the manipulation of control salience they were asked to evaluate all three nations. At the end of the questionnaire, they indicated the extent to which they identified with their own nation during the tournament. We hypothesized that for people who were highly identified with their nation, being reminded of low (vs. high) control in their life would increase national ingroup bias in intergroup evaluations.

Gathering data in the field increases the amount of contextual influences which may distort the data, such as intergroup dynamics at the tournament which are likely to affect attitudes towards national groups. Specifically, positive results in recent matches may increase ingroup bias whereas negative results may decrease it. To account for those possible influences and to contrast these influences with the hypothesized effect of personal control threat we also included the last match result (positive or negative) as a further independent variable.

### *Method*

*Participants and Design.* We approached 123 Austrians, 57 Croatians, and 120 Germans (88 women, 209 men, three did not indicate their gender) with a mean age of 27.98 ( $SD = 8.96$ ) at public places (e.g., fan sites) in the cities of Vienna, Klagenfurt, and Salzburg. Participants agreed to take part in a study on “beliefs and attitudes of Austrians, Germans, and Croatians at the EURO 2008”. In the three cities, the matches of the Austrian, Croatian, and German national teams had taken place and we conducted our study one or two days after each match. The three national teams were part of one qualifying group of which only the best two out of four teams entered the finals. As compensation participants had the opportunity to be entered in a raffle of one of seven vouchers (6 x EUR 25; 1 x EUR 30) for an electronic book store. We excluded 20 people from the analyses who did not remember the result of the last match of their national team correctly and additional 22 people due to missing data on ingroup identification scores. The final sample consisted of 105 Austrians, 49 Croatians, and 104 Germans (75 women, 181 men, 2 with no gender indicated) in the age of  $M = 28.07$  ( $SD = 8.99$ ).

We employed a three-factorial design with control salience (high/low personal control salient), national ingroup identification at the EURO 2008, and whether the result of the last

match was positive (won or tie<sup>9</sup>) or negative (lost) as independent variables and national ingroup bias as dependent variable.

*Procedure.* Each participant received a questionnaire in her or his own language<sup>10</sup>. After reading a brief introduction and indicating socio-demographic information participants were exposed to the manipulation of control salience. Half of the participants were asked to “take some moments and think about those aspects of your life that give you a sense of own power over and influence on the important things in your life. Please briefly describe in your own words those three aspects of your life that make you feel most powerful.”<sup>11</sup> (high control salient). The other half received similar instructions but were asked to think about aspects that gave them a sense of *lacking* own power and influence and to indicate the aspects that made them *least* powerful (low control salient)<sup>12</sup>.

Then participants were asked some delay questions about the last match of their national team and had to indicate this match’s result. After the delay questions participants were instructed to rate typical Austrians, Germans, and Croates each on a set of 15 attributes. Five of these items were related to competence (competent, self-confident, independent, competitive, intelligent) and four items concerned warmth (tolerant, warm, good-natured, honest; Fiske, Cuddy, Glick & Xu, 2002). Then we added six items that represented positive and negative (recoded) attributes that might be considered stereotypical for one of the three nations. These were “connectedness to homeland” (*heimatverbunden*), “valuing academic titles” (*titelversessen*), “achievement-oriented”, “self-opinionated”, “open”, and “stubborn”.

<sup>9</sup> The only match that resulted in a tie was Austria vs. Poland that was celebrated among Austrians as an unexpectedly positive result. It saved the Austrian team from dropping out of the tournament after the second match.

<sup>10</sup> Austrians and Germans share German as their national language and thus received questionnaires in German language. Croatian participants received questionnaires in Croatian language which had been translated from German by a bi-lingual speaker.

<sup>11</sup> We used the expression “power over the important things in your life” instead of “control” as in German everyday language the latter term sounds rather artificial and uncommon. However, please note, that the term “power” is used here as a synonym for “control” as it explicitly refers to objects of control that are not necessarily social.

<sup>12</sup> To avoid any contamination of the salience manipulations we did not include manipulation check measures in this study. However, analyzing the texts participants generated did not indicate any deviation from the instructions.

For each item participants indicated on a seven-point scale how well (1 = not at all; 7 = very much) it described each of the three nations ( $\alpha = .75$  for Austrian targets,  $\alpha = .82$  for Croatian targets,  $\alpha = .80$  for German targets). We computed a composite measure of ingroup bias by subtracting the mean of all outgroup ratings from the mean of ingroup ratings.

National identification served as independent variable. Participants had to answer 15 delay questions about the tournament and their national team after the experimental manipulation before identification was measured. Accordingly, it was unaffected by our manipulation ( $p = .38$ ). As the measure of identification, they were asked to indicate on seven-point scales how much they rejected (1 = strongly reject) or agreed with (7 = strongly agree) the following statements: “During the EURO 2008 I am identified with the Austrians” and “During the EURO 2008 nothing connects me with the Austrians” (recoded; Austrian version; nation replaced with the respective ingroup in the other versions,  $r(256) = .42$ ;  $p < .001$ ).

After returning the questionnaire to the experimenter, all participants were thanked, fully debriefed, and dismissed.

### Results

We submitted ingroup bias scores to a multiple regression analysis with interaction tests (Aiken & West, 1991) including control salience (-1 = high; +1 low control salient), ingroup identification (centered), and last match result (-1 = negative; +1 positive) as well as all possible interaction terms as predictors<sup>13</sup>. As a result, we found a main effect of ingroup identification,  $b = .12$ ,  $t(240) = 3.88$ ,  $p < .001$ ,  $\beta = .25$ , indicating that ingroup identification was positively associated with ingroup bias. As expected, we found an interaction of control salience and ingroup identification,  $b = -.07$ ,  $t(240) = -2.15$ ,  $p = .03$ ,  $\beta = -.14$ . Simple slope analyses revealed that the salience of low (vs. high) control increased ingroup bias for participants who were highly identified (+ 1 SD),  $b = -.14$ ,  $t(240) = -2.19$ ,  $p = .03$ ,  $\beta = -.20$ ,

<sup>13</sup> We had to exclude 4 participants with missing values on ingroup bias and 13 outliers with studentized residuals exceeding 2 or being lower than -2.

but not for those who were less strongly identified ( $-1$  SD),  $b = .05$ ,  $t(240) = 0.82$ ,  $p = .41$ ,  $\beta = .07$  (see Figure 3). From a different angle, ingroup identification increased ingroup bias only when low personal control was salient,  $b = .19$ ,  $t(240) = 4.40$ ,  $p < .001$ ,  $\beta = .39$ , but not when people were reminded of high control,  $b = .05$ ,  $t(240) = 1.18$ ,  $p = .24$ ,  $\beta = .11$ . No other effects were significant, all  $ps > .31$ .

#### *Discussion*

Supporting the model of group-based control we replicated the finding that lack of control salience increases ingroup bias in Study 3. This result supports the generalization of the findings of Studies 1 and 2 as in Study 3 we used a context-free manipulation of control salience and a different intergroup context. Furthermore, we found evidence for the moderating role of ingroup identification. National ingroup bias was only increased as a consequence of salient lack of control when participants identified highly with their nation in the context of the EURO 2008. This is consistent with the model of group-based control that proposes ethnocentric responses to control threat only when the respective groups have situational or personal significance for defining the social self (see Figure 1, Path b). As is also indicated by the results of Study 2, public events that make specific identities more (e.g., international sports competition) or less (e.g., fall of the wall anniversary) salient may affect group-based control processes, at least for some people.

We found no indication that specific tournament dynamics, such as the last match result, did reliably affect bias over and above the impact of ingroup identification. This may hint to the comparatively low impact situational dynamics have on national team support compared to trans-situational identities or personal motives such as the need for control. However, considering just the result of the last match may not have been sufficient to tap into the sometimes complex dynamics of an international football tournament, warranting further research on this issue.

#### Study 4

After demonstrating that personal control threat leads people to engage in support of their ingroup, we now turn to the interplay of personal and collective threat in determining ethnocentric reactions. It is proposed in the model of group-based control that people use group membership for efforts of restoring a global sense of control because they apply heuristics of ingroup homogeneity and agency. But what happens if these basic ingroup properties are threatened, for instance when people learn that ingroup members do not agree upon important values or do not act in a concerted manner? We hypothesize that threat to these central group properties exaggerates ethnocentric responses to personal control threat (see Figure 1, Path c). Specifically, people might be inclined to re-establish ingroup homogeneity and agency via ingroup support and defense, particularly when their own control is threatened. For instance, people may align their actions with ingroup norms, influence others to do the same, or act to pursue ingroup goals. More indirectly, ingroup homogeneity and agency might also be improved subjectively by favoring ingroups and derogating outgroups. This may increase the perception of the ingroup as a homogeneous unit via processes of social comparison: Intragroup differences appear smaller when the overall difference of the ingroup to an outgroup increases (meta-contrast principle; Turner et al., 1987). Furthermore, ingroup favoritism and outgroup derogation may increase the perceived legitimacy of ingroup relative to outgroup goal striving (Esses et al., 1998).

In Studies 4 and 5 we investigated the interplay of personal and collective threat to control in affecting ethnocentric responses. In Study 4 we investigated perceived intragroup homogeneity as a central precursor of effective collective action and thus collective control. We tested the hypothesis that threat to ingroup homogeneity on global values increases ethnocentric responses to personal control threat. Furthermore, we aimed at extending the previous studies by using a different manipulation of control salience and assessing ingroup support and defense in the context of artificial groups, created in the lab.

We manipulated the salience of control by asking participants either to write about their death (low control), self-determined death, or dental pain. Then we introduced the bogus categories of visual and analytic information processors and, on the basis of a fake test, assigned all participants to the former group. As a manipulation of threat to ingroup homogeneity participants learned either that within their group agreement upon important values was low (i.e., strong intra-group variation of approval ratings) or high (i.e., intra-group consistency in approval ratings). Then all participants were asked to evaluate both the ingroup (visual processors) and the outgroup (analytic processors) on attributes of warmth and competence.

#### *Method*

*Sample and Design.* Eighty-one men and 132 women with a mean age of 22.95 (SD = 3.86) participated in a computer-based study on “visual perception and personal values” in a laboratory at a German university campus. As compensation they could choose between a chocolate bar or a EUR 2 coffee voucher. For the analyses we excluded 21 participants who did “not at all” believe that the values we introduced to manipulate homogeneity threat would be of some importance. The remaining sample comprised 192 participants.

We used a 3 (uncontrolled death/self-determined death/dental pain salient) x 2 (threat/no threat to ingroup homogeneity) design with group evaluations on both warmth and competence attributes as dependent variables.

*Procedure.* Participants worked on a computer-based experiment. After some general instructions and socio-demographic questions we introduced the artificial groups. Participants were explained that people can be distinguished on the ground of two basic cognitive processing styles resulting in a group of visual processors and a group of analytical processors. Participants were told that these two groups would not differ with regard to competence and size but that processing style is indicative of a variety of personal preferences from strategies of problem solving to choice of occupation or life plans. Then, participants

worked on a bogus test of processing style that required them to decide which of eight different figures matched four briefly presented comparison objects. All participants were told that they belonged to the group of visual processors.

Then participants were asked to work on an electronic “value and opinion questionnaire”. Utilizing a procedure by Fritsche et al. (2008), participants were asked to write down their thoughts and emotions with regard to a specific possible event, which served as a manipulation of control salience. In the *lack of control condition*, participants were asked to imagine that they died due to an infectious disease. In the *partial control condition*, they were asked to imagine that their death was self-determined as a consequence of committing suicide after having been infected with a fatal disease. In a *neutral control condition*, they were asked to write about suffering dental pain. Fritsche et al. (2008, Study 5) have demonstrated the effectiveness of this manipulation in increasing control motivation in the pure death condition compared to both the self-determined death and the dental pain condition. To provide a delay following the manipulation of control salience, participants worked on a German version of the 20-item PANAS (Watson et al., 1988; Krohne et al., 1996)<sup>14</sup> and five questions about sleep and waking patterns.

Next participants completed a manipulation of ingroup homogeneity threat. First, participants worked on a bogus test that was said to measure the endorsement of general goals of human behavior on four basic value dimensions, which were named “interactive norm orientation”, “philanthropic ideals”, “perspective transcending values”, and “consequence-based basic orientation”. We used fictitious value labels to be able to give bogus feedback on individual values and to avoid processes of self-affirmation (Steele, 1988) that may have distorted the results. In this test, participants were presented two Rorschach-type figures and were asked ten questions about prevalent associations (e.g., suitability as a family coat of arms or as a symbol for a health-care organization). After finishing the test, they received

<sup>14</sup> Mood was not affected by the manipulations, all *ps* > .65. Thus, effects on the dependent variables cannot be attributed to affect.

detailed information about their individual test results and about how approval ratings for each score were distributed in the ingroup of visual processors. These distributions were presented as distribution plots on a four-point scale from 1 (is not strived for) to 4 (is strived for) with additional written information. The mean values of all four distributions were quite close to the alleged individual test score and were always in the positive half of the scale. In the *homogeneity threat condition* the distributions were quite flat with only about 30 to 40 % of people sharing the same individual score, indicating high variation in approval ratings among ingroup members. In the *no threat condition*, distributions were quite slim with more than 90 % of people sharing the same individual score. To check for the effectiveness of the manipulation after each distribution plot we asked participants to indicate how well they would be able to infer how much another person approved of the respective value when the only information about that person is her or his membership in the ingroup of visual processors (on six-point scales from 1 = not at all to 6 = very much),  $\alpha = .64$ .

As a second – more distal – manipulation check variable we measured perceptions of ingroup entitativity on five items (seven-point scales from 1 = “does not apply at all” to 7 = “does fully apply”), for instance, “The people in my information processing group share a common nature”, “People in my information processing group form a similar and homogeneous group”, or “The people of my group share common goals and a common fate”,  $\alpha = .84$ <sup>15</sup>.

We measured group evaluations on the warmth and competence dimensions by asking participants to indicate the extent to which they thought four different attributes would describe each group. Two of the four items measured ascriptions of warmth (“warm”, “good-natured”) and two measured ascriptions of competence (“intelligent”, “competent”). Order of ingroup and outgroup measures was counterbalanced. On a ten-point scale from 1 (not at all)

<sup>15</sup> For exploratory purposes we also measured perceived ingroup ties on five items as one dimension of social identification proposed by Cameron (2004). However, as this variable was neither affected by the manipulations nor did it affect the dependent variables, we did not include it for further analyses.

to 10 (absolutely) participants responded to the item “Probably, visual [analytic] processors are ... [attribute]”,  $\alpha = .82$  for outgroup warmth,  $\alpha = .81$  for ingroup warmth,  $\alpha = .75$  for outgroup competence,  $\alpha = .82$  for ingroup competence<sup>16</sup>.

After participants had finished the experiment they were fully debriefed, thanked, and released.

### Results

We manipulated control salience in three different conditions. In accordance with Fritsche and colleagues (2008) we conceptualized the uncontrolled death salience condition as representing salient lack of global control and the other two conditions to represent lower levels of control threat. We therefore tested a (2, -1, -1) contrast. Contrast coded control salience and homogeneity threat (-1, 1) were entered in multiple regression analyses with interaction tests. In parallel analyses we replaced the critical (2, -1, -1) contrast for control salience with the orthogonal (0, 1, -1) contrast to test for possible unexpected differences between the self-determined death and the neutral control condition. We will report these analyses only in cases where the latter contrast variable was significant. For all cell values see Table 1.

*Manipulation check.* The manipulation of ingroup homogeneity was successful. We entered the manipulation check measure as the criterion in a multiple regression analysis with control salience, homogeneity threat, and the interaction of both factors as predictors. We found a main effect of homogeneity threat,  $b = -.30$ ,  $t(171) = -4.65$ ,  $p < .001$ ,  $\beta = -.34$ ; homogeneity threat decreased perceptions of ingroup homogeneity. No other effects were significant, all  $ps > .61$ .

As a more distal indicator of the success of the homogeneity threat manipulation we submitted scores of perceived ingroup entitativity to an identical analysis, revealing a main

<sup>16</sup> We used these specific scales as dependent variables instead of a composite index of ingroup bias. We did so as we expected the specific design of Study 5 to prevent effects on some of the evaluations. We come back to this in the Discussion section.



effect of homogeneity threat,  $b = -.25$ ,  $t(171) = -2.87$ ,  $p = .005$ ,  $\beta = -.22$ , which decreased perceptions of entitativity. No other effects were significant, all  $ps > .36$ <sup>17</sup>.

*Main analysis.* We conducted analyses for warmth and competence ratings of the ingroup and outgroup, separately. This was indicated by the result of a previous 3 (uncontrolled death/self-determined death/dental pain salient) x 2 (threat/no threat to homogeneity) x 2 (ingroup/outgroup ratings) x 2 (warmth/competence ratings) mixed ANOVA with repeated measurement on the last two factors, revealing a four-way interaction,  $F(2, 166) = 3.29$ ,  $p = .04$ ,  $\eta^2 = .04$ . No other effects involving one of the experimental factors occurred, all  $ps > .12$ <sup>18</sup>.

Separate regression analyses for all mean ratings showed no effects for competence ratings of ingroup or outgroup, all  $ps > .34$ , which was in line with expectations as participants had been told that there would be no intergroup differences on competence. However, as expected, we found a significant interaction of control salience (2 -1 -1) and homogeneity threat for warmth ratings of the outgroup,  $b = -.17$ ,  $t(171) = -2.21$ ,  $p = .03$ ,  $\beta = -.17$ . Lack of control salience decreased outgroup ratings when homogeneity threat was high,  $b = -.27$ ,  $t(171) = -2.41$ ,  $p = .02$ ,  $\beta = -.27$ , but not when it was low,  $b = .07$ ,  $t(171) = 0.65$ ,  $p = .52$ ,  $\beta = .07$ . From a different perspective, homogeneity threat decreased outgroup evaluations when participants had been reminded of uncontrollable death,  $b = -.48$ ,  $t(171) = -2.64$ ,  $p = .009$ ,  $\beta = -.33$ , but not when they were made to think of self-determined death or dental pain,  $b = .03$ ,  $t(171) = 0.02$ ,  $p = .85$ ,  $\beta = .02$ . A parallel analysis for replacing the control salience contrast with the orthogonal contrast revealed no significant effects (all  $ps > .09$ ). No effect occurred for warmth ratings of the ingroup.

<sup>17</sup> Note, that an independent analysis including the orthogonal (0 1 -1) contrast for control salience revealed a significant interaction of control salience and homogeneity threat,  $b = .25$ ,  $t(171) = 2.34$ ,  $p = .02$ ,  $\beta = .18$ . It indicates that whereas homogeneity threat decreased perceived entitativity in the neutral control group,  $b = -.39$ ,  $t(171) = -3.88$ ,  $p < .001$ ,  $\beta = -.35$ , it did less so in the self-determined death condition,  $b = -.17$ ,  $t(171) = -1.64$ ,  $p = .10$ ,  $\beta = -.15$ , approaching significance. No significant (0 1 -1) contrast effects were observed in simple slope analyses for the conditions of high or low homogeneity threat, all  $ps > .08$ .

<sup>18</sup> A previous analysis including order of ingroup and outgroup ratings as a factor showed that order did not affect the reported four-way interaction,  $F(2, 160) = 0.02$ ,  $p = .98$ ,  $\eta^2 = .00$ .

### Discussion

Perceived threat to collective agency exaggerated people's ethnocentric response to threatened personal control. Specifically, when ingroup homogeneity on basic social values was threatened reminding participants of uncontrollable death decreased the evaluation of the outgroup compared to when participants were reminded of self-determined death or dental pain. This pattern is in line with the model of group-based control and the idea that intragroup homogeneity on values lays the foundation for perceived collective agency. People who perceive their sense of personal control to be fundamentally shaken react to threatened collective homogeneity with particularly strong defenses, because these people need homogeneous – and thus agentic – ingroups most.

In Study 4 only outgroup evaluations on the warmth dimension were influenced by the manipulations. However, ingroup evaluations or evaluations on competence were not affected. This was not surprising and most likely due to the specific constraints in the experimental situation. Here, we told people that both processing styles were equally effective and thus we did not expect any effect on competence ratings. The result that warmth ratings were only affected with regard to the outgroup but not the ingroup might go back to the fact that participants had received information about ingroup (but not outgroup) warmth beforehand as we gave the information that within the ingroup basic moral values were shared (the reported means were always clearly positive). No information was provided about the outgroup. Obviously, warmth evaluations of the outgroup were the only aspect which has not been set fixed in the instructions. Therefore, group-based control restoration effects could have only been expressed on warmth evaluations of the outgroup.

### Study 5

Study 5 served the conceptual replication of the finding from Study 4 that collective threat moderated the effects of personal control salience on ingroup support and defense.

Whereas we focused on threat to ingroup homogeneity in Study 4 we extended our focus to both ingroup agency and homogeneity as group features that both indicate ingroup entitativity (Brewer et al., 2004) and that should both be important for group-based control (see Figure 1, Path c). The present study took place in the context of natural groups and we used global manipulations of ingroup threat and threat to personal control.

We asked members of a human-rights volunteer organization to think either of aspects of their organization indicating high homogeneity and agency (low threat to ingroup entitativity), low homogeneity and agency (high threat), or neither high nor low expressions of ingroup entitativity (neutral group). Salience of either high or low personal control was manipulated in the same manner as in Study 3. Afterwards, as a measure of ingroup support we asked people to indicate their intentions to perform pro-organizational behaviors of different levels of difficulty. As previous research indicates that threat to control might only affect pro-organizational behavior that does not entail high risk of failure (Fritsche et al., 2008, Study 6) we measured ingroup support on three different levels of difficulty (low, medium, high).

#### Methods

*Sample and Design.* We recruited 121 volunteer members (76 women; 44 men; one person did not indicate gender) of a non-governmental, worldwide operating human-rights organization at local and trans-local meetings of this organization in Germany. Participants' mean age was 28.89 ( $SD = 13.67$ ). Eighty participants were university students, three were attending high school, 22 were employed, and 13 people did not match any of these categories. On average, they had been members of the organization for six ( $SD = 9.5$ ) years. We excluded nine participants who did not fill out the manipulation tasks, resulting in a final sample of 112 participants.

The study had a 2 (high/low personal control salient) x 3 (entitativity threat high/neutral/entitativity threat low) x 3 (easy/medium/difficult pro-organizational behavior) mixed design with repeated measurement on the last factor.

*Procedure.* All participants were randomly assigned one of six versions of a questionnaire that was introduced as a study on personality and attitudes towards the human rights organization they were member of. First, participants were asked to write about some of their own thoughts about their local human rights group, which served the manipulation of threat to ingroup entitativity. In the *high threat condition*, participants were first asked to write down the aspects that accounted for differences between individual members of the organization (threat to ingroup homogeneity) and then to describe how the individual members of their group would pursue his/her purely individual goals (threat to ingroup agency). In the *low threat condition*, participants were asked to write about agreement and similarity among group members (low threat to ingroup homogeneity) and then about how the group as a whole pursues its goals (low threat to ingroup agency). In a *neutral condition*, participants were first instructed to write down spontaneous associations that came to their mind when they were thinking of their group. Then, they were asked to describe the rooms in which their local group had its regular meetings.

We manipulated the salience of low or high personal control by using a task which was very similar to the one used in Study 3. We either asked participants to write about the aspects of their lives that gave them a sense of powerlessness or lacking influence over their own actions and the important things in their life (*low personal control salient*) or to write about aspects of their lives that gave them high power and influence (*high personal control salient*). After that we administered the 20-item PANAS and 13 items on sleep and waking patterns, to provide a delay (see previous studies).

Then, we measured intentions of pro-organizational behavior by asking participants to indicate how much they would agree with each of 15 intention statements (on a scale from 1 =

“do not agree at all” to 5 = “fully agree”). Five of these statements described behaviors that had been rated by experts as comparatively easy (e.g., signing a petition), some were of medium difficulty (e.g., preparing specific campaign materials), and some were quite difficult to perform (e.g., becoming the speaker for the group).

Before finishing the questionnaire participants were asked to give some socio-demographic information. Then they were thanked, fully debriefed, and dismissed.

### Results

A 2 (high/low personal control salient) x 3 (entitativity threat high/neutral/entitativity threat low) x 3 (easy/medium/difficult pro-organizational behavior) mixed factor ANOVA revealed a main effect of difficulty of pro-organizational behavior,  $F(2, 212) = 274.69, p < .001, \eta^2 = .72$ . Confirming our initial classification of pro-organizational behaviors, easy behaviors ( $M = 3.06; SD = 0.66$ ) were rated as more likely in the future than medium behaviors ( $M = 2.09; SD = 0.84$ ) and difficult behaviors ( $M = 1.47; SD = 0.92$ ) were rated less likely than medium behaviors (all  $ps < .001$ ). The only other significant result was a quadratic three-way interaction,  $F(2, 106) = 3.77, p = .03, \eta^2 = .07$ , all other  $ps > .08$ . To decompose the interaction we conducted separate 2 (high/low personal control salient) x 3 (entitativity threat high/neutral/entitativity threat low) ANOVAs for easy, medium, and difficult pro-organizational behavior. For cell values see Table 2.

For pro-organizational behavior of medium difficulty, we found the predicted two-way interaction of control salience and entitativity threat,  $F(2, 106) = 4.22, p = .02, \eta^2 = .07$  (all other  $ps > .22$ ). Salient lack of control increased pro-organizational behavior when entitativity threat was high,  $F(1, 106) = 7.18, p = .009, \eta^2 = .06$ , but not when it was neutral,  $F(1, 106) = 1.43, p = .23, \eta^2 = .01$ , or low,  $F(1, 106) = 0.08, p = .78, \eta^2 < .01$ . From a different angle, entitativity threat increased pro-organizational behavior only when low personal control,  $F(2, 106) = 4.94, p = .009, \eta^2 = .09$ , but not when high personal control was salient,  $F(2, 106) = 0.45, p = .64, \eta^2 < .01$ . Specifically, simple comparisons showed that pro-organizational

behavior was increased in the entitativity threat condition compared to both the neutral ( $p = .003$ ) and the low threat condition ( $p = .01$ ).

For behaviors of high and low difficulty we did not find any significant effects (all  $ps > .10$ ), with one exception. For behaviors of low difficulty, the predicted interaction effect of control salience and entitativity threat was approaching significance,  $F(2, 106) = 2.99, p = .055, \eta^2 = .05$ . The descriptive pattern of this interaction was similar to what we found for medium behaviors: As a trend, lack of control salience increased pro-organizational behavior only when entitativity threat was high,  $F(1, 106) = 3.72, p = .056, \eta^2 = .03$ , but not when it was neutral,  $F(1, 106) = 1.40, p = .24, \eta^2 = .01$ , or low,  $F(1, 106) = 0.91, p = .34, \eta^2 < .01$ . Looked at differently, entitativity threat seemed to affect behavior intentions only when people were reminded of low control,  $F(2, 106) = 2.63, p = .08, \eta^2 = .05$ , but not when they were made to think about high control,  $F(2, 106) = 0.64, p = .53, \eta^2 = .01$ . Specifically, when low control was salient entitativity threat increased pro-organizational behavior compared to the neutral ( $p = .03$ ) and the low threat condition ( $p = .056$ ).

### Discussion

In Study 5 we tested whether threat to ingroup entitativity (homogeneity and agency) moderates the effects of personal control threat on ingroup support which is proposed in the model of group-based control (see Figure 1, Path c). We conceptually replicated and extended the findings of Study 4. Following a global threat to personal control participants increased pro-organizational behavior that was of low or medium difficulty when at the same time threat to ingroup entitativity was salient. The effect of personal control salience did not occur when high entitativity was salient or when entitativity was not made salient at all. In other words, participants only then increased ingroup support as a response to personal control threat when the control restoring properties of the group seemed to be at stake. This directly supports the idea that ingroup support is functional for preserving the collective sources of control.

The data of Studies 4 and 5 also speak to the literature on the effects of collective threat (Branscombe, 1999; Riek et al., 2006). It seems that collective threat only then increases ethnocentric behavior when personal needs are activated that increase the subjective importance of the group. Obviously, the concurrence of personal and collective threats lays the ground for a strong ethnocentric response. However, this response does not necessarily target only ingroup bias or outgroup derogation (Study 4) but may also entail direct ingroup support (Study 5).

Interestingly, personal threat to control did not increase ingroup support and defense, when ingroup homogeneity or agency were salient (Studies 4 and 5). It seems that making salient membership in a highly entitative ingroup was sufficient to protect people from the adverse consequences threat to personal control can have. This is consistent with previous research on uncontrollable or self-determined death, showing that uncontrollable death led people to ascribe higher homogeneity to the ingroup (Fritsche et al., 2008). The same reasoning may explain the missing of any effect of personal control threat in the condition in which entitativity has not been made salient. Although in this condition, instead of writing about ingroup entitativity participants wrote down general associations they had with their human rights organization, the mere salience of this ingroup may have enhanced participants' sense of being member of a highly entitative group. This is because political action groups are per se likely to be considered highly entitative as they are task groups founded for the mere purpose to act collectively towards a shared goal (see Lickel, Hamilton & Sherman, 2001).

In Study 5 control threat only increased pro-organizational behaviors of medium and, as a tendency, low difficulty. Possibly, this is due to a floor effect for highly difficult behaviors. Also, one may speculate that under conditions of control threat people avoid efforts with a high risk of failure as failing on these tasks would confirm a state of personal helplessness (see Fritsche et al., 2008; Pittman, 1998).

General Discussion

Five studies provide converging evidence for specific effects of control threat on ingroup support and defense and therefore support a novel model of group-based control. We found that the salience of low control increased ingroup serving reactions such as ingroup bias (Studies 1 - 3), outgroup derogation (Study 4) and pro-organizational behavior (Study 5). This supports our basic assumption that people increasingly act in terms of group membership when their sense of global personal control is threatened (see Figure 1, Path a). It appears that, acting as a group member functions to restore or to maintain their sense of global control as heuristically, groups appear as unitary actors (Brewer et al., 2004).

However, people only show collective reactions to personal control threat when the respective ingroup represents their self, which we demonstrated in Study 3 (Path b). This stresses the view that thinking and acting in terms of group membership aims to restore control through the (social) *self*. That is, it seems that people cling more strongly to their ingroups under conditions of personal control threat because the ingroup represents the self (rather than because other group members may be expected to assist the individual in attaining her or his personal goals).

The present findings also speak to previous research by Kay and colleagues (Kay et al., 2008, 2009, 2010) as well as Rutjens and Loseman (2010). These authors have proposed that threat to personal control may elicit tendencies towards indiscriminate system justification and approval of external agents of control, such as God. They assumed that people react in that manner in order to reestablish a sense of order and certainty, thus striving for the perception that, if not themselves, some other, external, agent may control the world. Our findings suggest a different perspective on how people respond to personal control threat which may complement the insights by the authors mentioned above. Increased favoritism for ingroups vs. outgroups after threat to personal control and the moderation of this effect by ingroup identification indicate that people under personal control threat may not want the world to be controlled by just anybody but that they have a strong preference that the agent

who controls the world is *their own (social) self*. This is consistent with explications of a basic motive of control (e.g., Bandura, 1986; Pittman & Zeigler, 2007; Skinner, 1996) which is primarily about exerting control through the self and not about control exerted by some external (see Rotter, 1966) force.

Probably, the effects of control threat (Fritsche et al., 2008; Kay et al., 2008, 2009, 2010; Rutjens & Loseman, 2010) are driven by both the motivation to control the world through the self and the motivation to render the world predictable and non-chaotic (see Pittman, 1998). This is because in everyday life perceptions of lacking control have the potential to increase both uncertainty and threat to control. In Study 2 we took a first step to differentiate the effects of uncertainty and control threat and found evidence that both motives work in parallel, but independent of one another.

Threat to self-esteem has also been proposed to motivate defensive intergroup cognition (Fein & Spencer, 1997; Rubin & Hewstone, 1998). As perceptions of personal control are positively correlated with self-esteem (Judge, Erez, Bono & Thoresen, 2002) the present control threat effects might be explained in terms of threatened self-esteem. However, empirical evidence speaks against this possibility. First, the salience of low personal control seems to increase ingroup support irrespective of whether control referred to positive or negative self-related outcomes. In Studies 1, 2, and 4, under both high and low control salience conditions the final outcome (suffering long-term unemployment; being dead) was kept constant (i.e. negative). Nevertheless ethnocentric responses were increased in the lack of control condition. Second, studies on the effects of control threat manipulations in the context of death salience (Study 4) have not detected any effect on explicit or implicit state self-esteem (Fritsche et al., 2008; Fritsche, Du, Talati et al., 2012). Third, in more recent studies by Fritsche et al. (2012) the effects of uncontrollable death turned out to be most pronounced in people chronically low on internal control beliefs but were not moderated by explicit or implicit personal self-esteem.

### *The Interplay of Personal and Collective Threat*

Threat to collective homogeneity (Study 4) and agency (Study 5) catalyzed the effect of personal control threat on ingroup support and defense (Path c). This supports our assumption that heuristic beliefs about groups as unitary actors are essential for group-membership restoring perceptions of control. When these group properties are threatened, people who perceive low personal control increase ingroup support and defense in order to protect the group and to demonstrate ingroup agency.

This complements previous research on the detrimental consequences of collective threat on intergroup relations (e.g., Branscombe et al., 1999; Duckitt & Fisher, 2003; Riek et al., 2006; Stephan & Stephan, 2000). It has been found that both symbolic and realistic threat to a group can increase prejudice against outgroups. The present findings highlight personal threat as a possible moderator of these effects. This stresses the role of individual motives for the explanation of collective threat effects (see Correll & Park, 2005).

In the present studies we found increased ingroup defense following threat to both personal and collective control. However, it is an interesting question if threat to collective homogeneity and agency can also lead people who are deprived of personal control to distance from the group. Research on the consequences of collective threat has demonstrated distancing in lowly identified group members (Spears et al., 1997) and when people had a chance to switch to a non-threatened group (Ellemers et al., 1988). We may speculate that a sense of global control can be restored by referring to one of many different possible incarnations of the self (Turner et al., 1987). If control restoration on the personal level of the self seems futile (as it might have been the case in the present experiments where participants were not given the opportunity to restore perceptions of personal control) people may cling to one of various possible self-definitions on the group level. Given that two or more social self-categories are equally salient in a situation and people are equally identified with each of the groups, they may prefer self-definition in terms of a non-threatened group and distance from a

threatened ingroup under conditions of personal threat. In terms of group-based control, perceptions of lacking personal control may lead people to distance from a seemingly non-homogeneous and non-agentic ingroup when an alternative self-category is salient that is of at least similar subjective centrality for defining the self.

Nevertheless, in everyday life, collective self-definition is often determined by the actual social context (e.g., watching a football match of the own national team or having been diagnosed a visual instead of an analytical processing style) and there are chronic differences in people's identification with different ingroups (e.g., people who are highly identified with their own human rights group but less so with their neighborhood). Thus, simply "switching" to an alternative group identity when the presently focused ingroup turns out to be lacking control seems neither to be easy nor common in the course of everyday cognition. Therefore, and in accordance with the data of Studies 4 and 5, instead of distancing from the ingroup, the combination of threat to personal and collective control will often result in exaggerated levels of ingroup support and defense.

#### Conclusion

Thinking and acting as a group member can free people from the limitations of control they may recognize as individuals. It also may pave the way to more formalized collective action or social movement participation which has been shown to be an identity driven process (Stürmer & Simon, 2004). This is how symbolic control restoration via group membership may indirectly foster social processes that can actually lead to self-serving changes in the environment. However, as the downside of these processes group-based control can result in increased levels of ethnocentrism and outgroup derogation.

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Table 1

Group evaluations on warmth and competence attributes (1-10), manipulation check scores (MC; 1-6) and perceived ingroup entitativity (1-7) as a function of control salience and threat to ingroup homogeneity (Study 4): *M* (*SD*).

	Uncontrolled death		Self-determined death		Dental pain salient	
	salient		salient			
	Threat to	No threat	Threat to	No threat	Threat to	No threat
	Homo-		Homo-		Homo-	
	geneity		geneity		geneity	
Outgroup	4.83 (1.39)	5.79 (1.43)	5.25 (1.41)	5.68 (1.69)	6.04 (1.45)	5.50 (1.24)
warmth						
Ingroup	7.27 (1.54)	7.53 (1.27)	7.33 (0.97)	7.34 (1.38)	7.10 (1.38)	7.21 (1.38)
warmth						
Outgroup	7.20 (1.11)	7.28 (1.48)	7.04 (1.10)	7.05 (1.85)	7.00 (1.23)	7.50 (1.40)
competence						
Ingroup	6.72 (1.10)	7.02 (1.38)	6.90 (0.97)	6.90 (1.62)	6.96 (1.22)	6.79 (1.00)
competence						
MC Homo-	3.87 (0.85)	4.45 (0.96)	3.83 (0.67)	4.40 (0.86)	3.74 (0.82)	4.42 (0.85)
geneity						
Entitativity	2.89 (1.12)	3.59 (1.18)	3.41 (0.71)	3.30 (1.14)	2.89 (1.21)	3.78 (1.10)
N	30	34	24	31	24	29

Table 2

Pro-organizational behavior (1-5) of low, medium, and high difficulty as a function of control salience and threat to ingroup entitativity (Study 5): *M* (*SD*).

	Low personal control salient			High personal control salient		
	Entitativity threat high	Neutral condition	Entitativity threat low	Entitativity threat high	Neutral condition	Entitativity threat low
Low difficulty	3.39 (0.56)	2.91 (0.74)	2.93 (0.52)	2.93 (0.90)	3.14 (0.55)	3.16 (0.52)
Medium difficulty	2.71 (0.99)	1.89 (0.77)	1.97 (0.89)	1.93 (0.81)	2.17 (0.76)	2.05 (0.74)
High difficulty	1.76 (1.06)	1.35 (0.99)	1.22 (0.77)	1.76 (1.06)	1.49 (0.84)	1.33 (0.74)
N	14	25	18	18	23	14

Figure 1

Predictions derived from the model of group-based control.

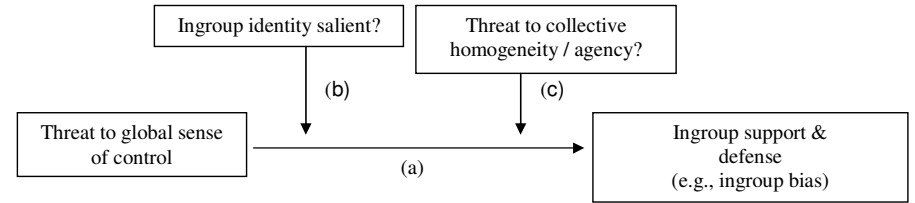


Figure 2

Ingroup bias (from -6 to +6) as a function of control salience, uncertainty salience, and awareness of the fall of the wall (Study 2).

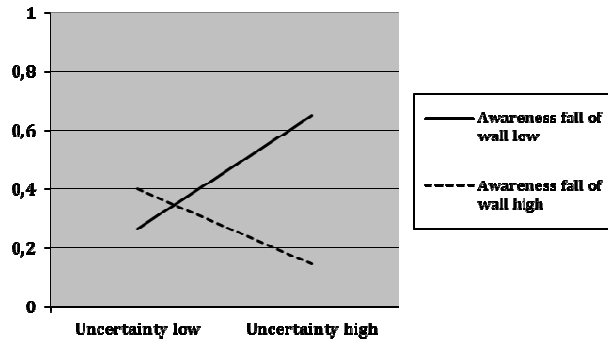
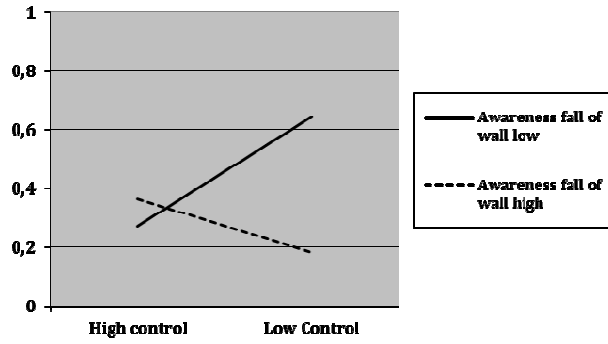


Figure 3

Ingroup bias (from -6 to +6) as a function of control salience and ingroup identification (Study 3).

