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Master's thesis

Testing the transferability of collective action theories to radical action

Name and initials:	Rosenbusch, H.
Student number:	s2995379
Email address:	hannes.rosenbusch@gmail.com
Cohort:	2015-2017
Thesis supervisor(s):	Prof. dr. Russell Spears
Co-assessor:	Prof. dr. Ernestine Gordijn
Programme:	Research Master *Behavioural and Social Sciences*
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Abstract

Collective action theories, guided by the social identity approach, explain goal-directed group behavior like demonstrations and political activism. We investigate whether the same theories can explain radical behaviors like group violence. New research contests this and proposes theory adjustments regarding the psychological constructs group efficacy, in-group identification, and intergroup emotions. Our experimental analysis (*N*=298) showed that local efficacy, as indicated by in-group support, has a constant positive effect across moderate and radical actions. The effect of global efficacy, in the form of political influence, neither increased nor decreased collective action of any sort, reflecting the ambiguous theories and the complexity of the construct. The positive effect of in-group identification vanished when actions were radical instead of moderate. The standout function of intergroup anger as a predictor of both moderate and radical behavior was supported while more extreme emotions like contempt and disgust did not provide additional predictive value. Further, participants were more strategic when endorsing radical as opposed to moderate actions by considering anonymity and in-group presence. In general, collective action theories, especially the SIDE model, served as a good foundation for explaining radical action in this research. However, in-group identification and situational characteristics affect radical action differently than moderate action, warranting theoretical adjustments.

Introduction

Radical action, that is behavior involving violence and law-breaking, is one of the hottest topics today (McCauley & Moskalenko, 2008; McCauley & Moskalenko, 2017). Nevertheless, the motivation for such behaviors is often difficult to understand: "Why would anyone do that?", is a common reaction to reports of terrorist attacks. Research in the field of psychology tries to answer this question, and proposes competing theories. Classic theories about group behavior can already explain the psychology behind demonstrations and political activism. However, many would argue intuitively that these theories on 'collective action' are not transferable to radical behavior like violence. Consistently, new studies indicate that theoretical adjustments are needed when trying to explain *radical* collective action. In this thesis, we will review these competing theories from collective action research and new research on radical action, and provide clarifying experimental evidence.

Collective action is commonly defined as group-based behavior that aims at improving the in-group situation (Tajfel, 1978; Klandermans, 2002; van Zomeren, Postmes, & Spears, 2008). Until recently, the literature has strongly focused on moderate (i.e. non-radical) group behaviors like demonstrations and the psychological facilitators thereof (see Becker & Tausch, 2015). Radical action was usually treated as a separate phenomenon given the presumably unique features of radical groups. Recently however, this assumption has been largely superseded by a new line of thinking. Background factors of group members, like socio-demographic and ideological factors, do not actually correlate reliably with radical behavior (Kruglanski & Fishman, 2006; Berrebi, 2003; Krueger & Malečková, 2003). In contrast, violence is now often seen as a context-dependent strategy used by a wide range of groups to deal with their specific social and political situation (Saab, Spears, Tausch, & Sasse, 2016; Becker & Tausch, 2015; Kruglanski & Fishman, 2006; Thomas & Louis, 2014). This shift in thinking places radical action in the realm of collective action research (Pires, 2014). The provisional explanations for radical group behavior provided by established collective

action research, most notably social identity theory, remain largely unexamined. Moreover, new theories have already been suggested in recent years that challenge social identity theory in explaining radical action. While contrasting the theoretical approaches in this thesis, we will apply a special focus on the psychological constructs of group efficacy, in-group identification, and specific intergroup emotions. All three are central predictors of group behavior in most of the described theories. Further, we will compare and test hypotheses from the competing theories by means of an experimental study. Empirical evidence in the psychological study of radical action is still scarce and experimental methods even rarer. Our empirical contribution can therefore not only illuminate the network of opposing theories on radical action, but also give an example of how to conduct experimental research in this demanding research field.

Overview of collective action theories

In this section, we review prominent psychological theories, which make statements about the psychological facilitators of collective action. We will briefly describe the essence of each theory, while highlighting the proposed effects of group efficacy, in-group identification, and intergroup emotions. All theories are rooted in the overarching social identity theory (SIT), which has guided much psychological research on collective action for about half a century. Subsequently, we will review new theories that reject the application of SIT reasoning to the context of *radical* collective action.

Social identity theory. Tajfel and Turner formulated the SIT in the 70s and 80s as a fundamental approach to describe the psychological relationship between individuals and groups (e.g. Tajfel & Turner, 1979). The essence of the theory proposes that people define who they are by means of the groups they belong to (e.g. women, Republicans, soccer fans; Tajfel & Turner 1986); hence, the term *social* identity. An additional premise of SIT is that people strive for a positive self-concept and therefore a positive view of the groups they

belong to (Tajfel & Turner 1986; Hornsey, 2008; Branscombe, Ellemers, Spears, & Doosje, 1999). This need for self-enhancement is expressed through positive evaluations of the in-group (Haslam, Oakes, Reynolds, & Turner, 1999; Tajfel & Turner, 1979), behavioral biases that favor the in-group (Tajfel, 1970), and finally collective action to improve the situation of the in-group in society (e.g., van Zomeren, Postmes, & Spears, 2008). However, SIT specifies that people only engage in collective action if their in-group currently has a low status, if they see the status quo as illegitimate, and if the status quo appears unstable (i.e. malleable; Ellemers, 1993; Mummendey, Klink, Mielke, Wenzel, & Blanz, 1999). Most prominently, SIT proposes that the more people identify with their in-group, the more they are inclined to engage in collective action (van Zomeren, et al., 2008; for recent reviews see Sindic & Condor, 2014; Hogg, 2016). Self-categorization theory, as a central part of the social identity approach, adds that the nature of people's behaviors (e.g. moderate vs. radical) depends on the norms of their respective in-groups (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Shih, Pittinsky, & Ambady, 1999; Kuppens, Yzerbyt, Dandache, Fischer, & van der Schalk, 2013). Thus, radical behaviors are included in the spectrum of actions that the social identity approach targets to explain. However, new theorizing suggests that SIT's hypotheses might fit less well for the special context of radical collective action. Before going into the details of these opposing approaches, we will first outline three offshoots of SIT: the dynamic dual-pathway model, the SIDE model, and intergroup emotion theory. These sub-theories of SIT explicitly connect collective action with the aforementioned efficacy construct and intergroup emotions.

Dynamic dual-pathway model. The dynamic dual-pathway model unites different proposed causes of collective action into two main mechanisms: problem-focused coping and emotion-focused coping (van Zomeren, Spears, Fischer, & Leach, 2004). While maintaining that people must identify with their in-group and have an interest in a positive social identity

(see SIT), the dual-pathway model specifies that there are two concrete avenues to collective action.

Firstly, problem-focused coping with collective disadvantage (cf. 'illegitimate, low status' in SIT) occurs only when group members perceive that their own group has the necessary *efficacy* to change the status quo. Based on cost-benefit considerations it only makes sense to protest and invest energy into collective action, if these actions are considered efficacious in attaining group goals (Stürmer & Simon, 2009; van Zomeren, Spears, & Leach, 2010). If group members do not have sufficient efficacy to change the status quo, they refrain from collective action (Klandermans, 1997). The notion of sufficient group efficacy originates in SIT's statement that system instability promotes collective action. Under high efficacy or system instability respectively, societal change seems to be in reach, which leads to higher motivation for action among group members.

Secondly, a complementary route to collective action involves the driving force of emotions and more specifically *anger*. This pathway is closely related to the perception of illegitimacy which according to SIT is a prerequisite for collective action (Spears, et al., 2011). In the dynamic dual-pathway model, anger is a robust predictor of collective action because it reliably entails confrontational action tendencies to address perceived injustices (van Zomeren, Leach, & Spears, 2012). SIT presages and supports the argument that (intergroup) emotions result from people's social identity and potentially mediate the relationship of in-group identification and between-group competition (e.g. van Stekelenburg & Klandermans, 2013). Over the years, the anger hypothesis has gained considerable support and anger is noted as an explicit predictor of collective action in other psychological theories (e.g. SIMCA: van Zomeren, et al., 2008; intergroup emotion theory: below).

Social identity model of deindividuation effects. Like the dynamic dual-pathway model, the social identity model of deindividuation effects (SIDE) explains under which circumstances group members engage in group-based action. SIDE was formulated as a

critical response to deindividuation theory (Le Bon, 1895/1947; Festinger, Pepitone, & Newcomb, 1952; Zimbardo, 1969; for a critical review see Spears, 2016), which suggests that people lose their sense of self, morals, and behavioral constraints when in crowds and are therefore more prone to engage in aggressive behavior (see Kugihara, 2001). SIDE argues (in line with SIT) that the sense of self is not 'lost' in a group, but rather is the self-identity temporarily comprised of values and norms of the salient in-group rather than the individual self (Reicher, Spears, & Postmes, 1995). Thus, people's control over their behavior is neither diminished, nor do they necessarily turn more aggressive; they rather act out their social identity as opposed to their individual identity (Spears, 2016). This means, for example, that crowds comprised of stereotypically non-aggressive individuals (e.g. nurses; Johnson & Downing, 1979 cited in Reicher, et al., 1995) become *less* aggressive when their in-group is salient, because aggression is not consistent with their social identity.

Moreover, SIDE argues that in-group favoring behavior (such as collective action) is expressed by group members in face of an opposing out-group "only to the extent that they have the power to overcome any anticipated or actual resistance and/or retaliation by that out-group" (Reicher, et al., 1995, p. 186). This strategic dimension of SIDE states that anonymity towards out-groups will lead to an increase of punishable, albeit in-group approved behavior (Reicher, Levine, & Gordijn, 1998). However, anonymity towards the *in*-group will have the reverse effect, because actors are cut off from potential social support (Spears, Lea, Corneliussen, Postmes, & Haar, 2002). The notion of anonymity towards the out-group under simultaneous social support by the in-group can be reformulated as a sense of situational efficacy, which helps in-group members to implement acts of collective action. As in the dual-pathway model, (situational) efficacy emerges as a positive predictor of collective action in the SIDE model (Spears, et al., 2002).

Intergroup emotion theory. The last decades have seen an ever-growing interest in intergroup emotions as complementary predictors of collective action (e.g. Miller, Cronin,

Garcia, & Branscombe, 2009; Doosje, Branscombe, Spears, & Manstead, 1998; Shepherd, Spears, & Manstead, 2013). The publication of the dynamic dual-pathway model in 2004 was a cornerstone in this development given that it identified anger as a primary driver of collective action. Based on classic SIT, which does not explicitly include emotions (but see Spears, et al., 2011), Smith (1993) and Mackie, Devos, and Smith (2000) developed the intergroup emotion theory (IET). The central premise of IET is that emotions can be felt on behalf of a group that one identifies with. Thus, emotions can be elicited on an (inter-) group level (Smith, Seger, & Mackie, 2007; Gordijn, Yzerbyt, Wigboldus, & Dumont, 2006) and steer intergroup relations through their associated action tendencies (e.g. Iyer, Schmader, & Lickel, 2007). Examples that have been studied include among others group-based shame (Gunn & Wilson, 2011), group-based guilt (Zebel, Doosje, & Spears, 2009), group-based hope (Wlodarczyk, Basabe, Páez, & Zumeta, 2017), and group-based pride (van Leeuwen, van Dijk, & Kaynak, 2013). Still, when investigating collective action, studies in the context of IET confirm that it is primarily group-based anger, which lies at the root of peaceful demonstrations and other forms of moderate engagements (e.g. Smith, Cronin, & Kessler, 2008; see dynamic dual-pathway model discussed above).

Summary of SIT based theories. SIT, and its descendant theories described above, agree on the three predictors of collective action that we focus on in the current work. From early on, *in-group identification* was assumed to be a positive predictor of engagement in collective action. The self-concept of high identifiers is more strongly dependent on the group's fate and they should therefore feel more inclined to engage on behalf of their group. Further, *group efficacy* is presented as another positive predictor of collective action in SIT, as well as in the dynamic dual-pathway and SIDE model. The logic of the positive relationship between group efficacy and collective action is always based on rational cost-benefit considerations of the group members. However, the conceptualization of efficacy differs between the dynamic dual-pathway model and the SIDE model. High efficacy in the

dual-pathway model refers to the belief of group members that their actions can help to bring about the targeted societal change. The SIDE model describes efficacy as the potency of group members to implement a specific collective action, based on in-group support and strategic considerations of the current situation. According to their respective literature, both types of efficacy should have a positive linear effect on collective action. Lastly, the *emotion* driving collective action is unanimously assumed to be anger. The dynamic dual-pathway model, as well as the more general IET, agree on the standout function of anger in this regard.

Across all described theories and models, empirical evidence for the predictors of collective action was mostly generated by examining *moderate* action (often demonstrations, petition signing, and other peaceful means). *Radical* action is frequently assumed to be an additional outlet of collective action that serves the same purpose (attaining group goals). Thus, one might hypothesize that group efficacy, in-group identification, and anger also constitute positive predictors of radical behavior. However, all three effects are either contested, refined, or even reversed in new theorizing on radical collective action.

Beyond SIT: Critical responses in the field of radical action

Radical action is certainly implemented in many cases to attain group goals. A study of current terrorist strategy reveals, for example, that in addition to reported religious motivations, acts of terrorism often follow strategic, political objectives (Naji, 2004). Similarly, violent riots rarely break out based on people's irrational urge to cause mayhem. Rather, are they implemented to gain attention for a cause and elicit social change (Reicher, 1987; Vider, 2004). Thus, the current reasoning that radical action is comparable to instrumental collective action based on similar goals seems to hold. However, there are also striking differences between these two kinds of behavior. While moderate collective action is aligned with society's norms, radical behavior breaks these norms by definition (see non-normative action in Wright, Taylor, & Moghaddam, 1990; see out-of-the-system action in

Sabucedo & Arce, 1991). Consequently, radical action, albeit impactful, is often punished (Brownlee, 2007), morally disputed (Bandura, 1999) and potentially damages the reputation of the in-group (Jiménez-Moya, Spears, Rodríguez-Bailón, & Lemus, 2015). It follows that the psychology behind radical action might very well be different, and collective action theories cannot be applied without prior scrutiny. In the following paragraphs, we will describe theories that were formulated to address weaknesses of SIT in the field of radical action. Accordingly, these theories propose alternative effects for all three constructs: group efficacy, in-group identification, and intergroup emotions.

As described above, social identity research suggests a positive effect of group efficacy on collective action. However, opposition comes from nothing-to-lose research (NTL), which focuses on radical collective action (Spears, in preparation; Scheepers, Spears, Doosje, & Manstead, 2006; Tausch, et al., 2011). According to Spears and colleagues, it is in fact a *low* efficacy that can induce radical action tendencies, because moderate channels of influence are closed for the in-group. This can lead to a desperation strategy, because the status quo is not acceptable, and moderate action is unlikely to bring relief (Tausch, et al., 2011). Groups in such grim situations can potentially resort to radical action, because they arguably have nothing to lose. First empirical analyses for radical action had mixed results, sometimes favoring SIT and sometimes favoring NTL (Spears, in preparation). A possible explanation is found when revisiting the fact that group efficacy can be conceptualized on a societal (global) as well as on a situational (local) level (see dynamic dual-pathway vs. SIDE model). NTL certainly contests SIT in regard to *global* efficacy. A group's *general* lack of political influence either sparks desperation and radicalization (NTL) or leads to apathy and refraining from collective action (SIT). However, NTL has little to say regarding *local* efficacy, as indicated by in-group support in the SIDE model. Thus, the positive effect of *local* in-group support on radical action is not disputed and might indeed prevail. Group members indeed rely strongly on in-group support, especially when the group has low power

and even more so if the group plans to implement radical actions. In such instances, local in-group support can help to overcome the threat of a stable social system, superior out-groups, and anticipated retaliation. Thus, desperate times indeed call for desperate measures, in the form of radical action (see NTL), but the implementation of these measures is still likely to dependent on in-group support (see SIDE). If *both*, global and local efficacy, are low, SIT's prediction should hold; that is collective action of any kind should decrease. However, NTL's central proposition that low global efficacy *promotes* rather than reduces radical action, when reinforced by local efficacy, stands in direct contrast to SIT.

Regarding in-group identification, the second predictor of collective action, NTL again reverses the hypothesized mechanisms of SIT. It is intuitive that people who identify strongly with their group are more inclined to engage in collective action to support their group (see SIT). However, their endorsement of *radical* actions to promote in-group goals is potentially more ambivalent. In two studies, it was shown that high identifiers shy away from radical actions while low identifiers appear to show a relatively higher readiness for such behaviors (Jiménez-Moya, et al., 2015). The authors argue that high identifiers are afraid to inflict damage on their social identity by engaging in apparently immoral behaviors (like blackmailing), whereas low identifiers are less concerned about the reputation of the in-group. That is low identifiers have *nothing to lose* when putting the image of the broader in-group on the line, because they are not reliant on a positive group image. Moreover, high identifiers have a relatively strong drive to align their behavior with group norms (Jetten, Postmes, & McAuliffe, 2002; Jetten, Spears, & Manstead, 1997). If radical action violates the norms and rules of the in-group, which is the case for most (albeit not all) groups, high identifiers would risk to be punished or ousted from the group (Pinto, Marques, Levine, & Abrams, 2010; Otten & Gordijn, 2014), which would compromise a central part of their self-concept (Ellemers, Spears, & Doosje, 2002). Conversely, low identifiers do not rely as strongly on a positive relationship with the in-group and are therefore less inhibited to break the group's rules

against radical action. Thus, in direct contrast to SIT's claims, in-group identification might have a *negative* effect on radical collective action. Consistent with this, Becker and colleagues showed that engaging in radical action on behalf of one's group leads to disidentification with the broader in-group, because the activists feel more attached to the cause than to the (reputation of their) in-group (Becker, Tausch, Spears, & Christ, 2011).

Lastly, new psychological research in the field of radical action maintains the claim that anger is a driver not only of moderate engagement, but also of radical behavior. However, Tausch and colleagues (2011) found that the additional occurrence of intergroup *contempt* shifts group members' action output from normative to non-normative means like violence. The proposed mechanism is that contempt, unlike anger, usually indicates that the antagonist (group) is considered beneath human standards and no future reconciliation is sought. Thus, group members have fewer inhibitions to engage in violence and other non-forgivable actions towards the out-group. Accordingly, (group) dehumanization, which is closely related to the feeling of contempt, was shown to be a reliable predictor of aggressive intergroup behavior (Haslam & Loughnan, 2014; Esses, Veenvliet, Hodson, & Mihic, 2008). Other authors agree that anger is not always sufficient to bring about radical behavior, but argue that hatred (Halperin, 2008) or disgust combined with contempt (Matsumoto, Hwang, & Frank, 2017) can elicit such actions. The main claim of these new theories can be condensed to the hypothesis that extreme emotions like contempt and disgust uniquely predict extreme behaviors like violence above and beyond 'pure' anger (for pure vs. mixed anger see de Vos, van Zomeren, Gordijn, & Postmes, 2013). Thus, prior SIT reasoning is extended and emotions other than anger are assumed to be the crucial predictors of radical engagement.

Hypotheses overview

Reviewing the competing theories on radical collective action provides two sets of hypotheses that can be tested and compared through empirical analyses. Given that radical

action might be just another outlet of collective engagement, classic SIT hypothesizes positive effects of global group efficacy, local group efficacy, in-group identification, and anger on the endorsement of radical action. In direct opposition to these hypotheses, new psychological theories in the field of radical action propose different relationships between the key predictors and radical action endorsement.

NTL hypothesizes that group efficacy is *negatively* related to radical engagement. A thorough examination of the efficacy construct in NTL shows that efficacy is understood as a *global* efficacy, meaning a group's overall potency to elicit change (cf. system instability in SIT). However, the positive effect of high *local* efficacy, for example indicated by in-group support (cf. SIDE), is not disputed in NTL and might therefore prevail for radical action. In addition, NTL proposes that in-group identification is *negatively* related to radical action, because of the implied political risks for the self and the in-group. Finally, the standout function of anger is relativized in new theory and contempt is suggested to be the crucial factor when predicting radical behavior. Table 1 serves as a summary of the hypotheses from both lines of theory.

Table 1

Overview of competing hypotheses from SIT and radical action research

Construct	SIT and related theories	New radical action theories
Group efficacy	High global efficacy and high local efficacy lead to collective action endorsements	A combination of low global and high local efficacy lead to radical action endorsements
In-group identification	High identification leads to collective action endorsements	Low identification leads to radical action endorsements
Intergroup emotions	Anger leads to collective action endorsements	A combination of anger and contempt lead to radical action endorsements

Method

The empirical study presented below tests the competing hypotheses of SIT and new radical action theories. Participants were immersed in an artificial conflict situation by means of a bogus personality test and a mock documentary portraying a "hidden societal conflict between community-agents and ego-agents". Creating artificial groups and assigning participants to the groups ourselves allowed us to fully control the content of the conflict situation. We manipulated global efficacy and local social support of the in-group within the mock documentary. Moreover, we measured in-group identification, intergroup emotions, and endorsement of moderate and radical intergroup actions to test the full sets of hypotheses listed above. The moderate and radical actions were further split into anonymous and identifiable, and individual and group actions to distinguish different outlets of collective action. Subdividing the action outputs also allowed us to test hypotheses about the strategic implementation of collective action under anonymity and in-group presence (see SIDE model).

Participants

The sample consisted of 298 undergraduate psychology students at a Dutch University (187 female, 1 no identified gender; mean age: 20.32 years), who received course credit for their participation.

Design and procedure

Participants were randomly assigned to the experimental conditions. We applied a 2 (high global efficacy vs. low global efficacy) x 2 (high local support vs. low local support) between-subjects experimental design with 2 (radical vs. moderate action) x 2 (identifiable vs. anonymous action) x 2 (individual vs. group action) within-subjects factors. The experiment was carried out in a laboratory on campus. The experimenter informed the participants about

the procedure by reading the key information out loud (see Appendix A for the written introduction). After providing consent, participants were shown to their individual rooms where they worked through the study on PC monitors.

As a first step, participants generated a personal ID code for the study, which was intended to convey a feeling of anonymity (see Appendix B for instructions). Next, participants carried out a bogus word association test, which reportedly diagnosed them as either a "community-agent" or an "ego-agent". However, all participants received the same diagnosis regardless of their answers and were told to belong to the group community-agents with a very high probability (see Appendix C for standardized evaluation sheet). The items of the bogus word association test (see Appendix D) were discarded for the analysis. Subsequently, the participants watched an eight-minute video, which introduced them to their in-group community-agents and their adversarial out-group ego-agents. The video was allegedly owned by the (again bogus) European Psychology Magazine. Actually, it was designed by the researchers and contained the experimental manipulations as well as a back story for the artificial group conflict. Participants were told in the video that people in society can be classified into one out of two groups, ego-agents and community-agents. Further, they learned that ego-agents typically exploit and mistreat community-agents for their own benefit, whereas community-agents are pro-social and motivated to help other people. Accordingly, the documentary described that ego-agents are responsible for many of society's biggest problems. These findings were reported to be new and based on evidence of comprehensive psychological studies at the University of Groningen and the University of Princeton. Depending on the experimental condition that the participants were assigned to, they further learned that community-agents have a high degree of global efficacy in the political arena (majority status and political success) or a very limited efficacy (minority status and no political success). The video further described that fellow community-agents are either highly outraged by the exploitation by ego-agents (local support) or do not care at all (no local

support). Outrage expressed by fellow group members serves as a strong indicator of social support for collective action (Van de Vyver & Abrams, 2015; Thomas & McGarty, 2009; see Appendix E for the full script and links to the videos). After watching the assigned version of the video, participants completed manipulation checks, measures of collective action endorsements and intergroup emotions, questions on the believability of the cover story, and items on demographic information before being fully debriefed.

Measures

Manipulation check. The success of the two manipulations (global efficacy and local support) were assessed with one item respectively. Both items were answered using a 7-point scale. The effect of the global efficacy manipulation was measured with the question "How much political power/success do community-agents have?" (No power – A great deal of power). The effect of the in-group support manipulation was measured with the question "How upset are community-agents about the oppression by ego-agents?" (Not at all – Very much).

Collective action scales. The primary dependent variables were 38 items assessing the endorsement of future collective actions. Each item started with the question: "Would you consider the following strategy to counter the exploitation by ego-agents?", which was followed by the specific action to be considered. Answers were given on a 7-point scale (Definitely not – Definitely yes). Based on the targeted three within-subject factors (moderate vs. radical action, identifiable vs. anonymous action, individual vs. group action) we designed and yoked eight crossed subgroups within the item pool. An example for an item targeting individual, moderate, identifiable action is "Verbally confront ego-agents about their oppressive and ego-centred behaviour." An example for an item targeting group-based, radical, anonymous behavior is: "Secretly gather with other community-agents to sabotage businesses of ego-agents." Reliabilities for the eight subscales ranged from medium-high

(Cronbach's alpha=0.64) to high (Cronbach's alpha=0.88). The complete list of items and reliability scores is given in Appendix F. All scales were coded so that higher scores indicate a higher endorsement of the included actions.

Intergroup emotions. We further assessed emotions felt towards the adversarial group ego-agents. Included were anger, disgust, contempt, fear, admiration, and respect. The overarching question: "To what extent do you feel the following emotions towards ego-agents?", was answered on 7-point scales (not at all – very much) for the individual emotions. Past research has shown that single item scales are reliable measures of intergroup emotions (Shuman, Cohen-Chen, Hirsch-Hoefler, & Halperin, 2016; Cohen-Chen, Halperin, Porat, & Bar-Tal, 2014; Roseman & Evdokas, 2004).

In-group identification. The participants' degree of identification with their own in-group community-agents was assessed with two items: "I identify with my group" and "I see myself as a community-focused person". Both items were measured on a 7-point scale (not at all – very much). The reliability of the scale was high (Cronbach's alpha=0.86). The scale was coded so that a higher score indicates a higher identification with the in-group. Given that the experiment involved a high degree of deception and a so far unknown in-group (community-agents), we assessed descriptive statistics for the identification measure to assess how well this group paradigm worked. The mean identification for the sample is 5.32 (*SD*=1.3). 88.6% of the sample scored 4 or higher on the 7-point measure. We therefore assume that the bogus classification test and video documentary worked well to induce group membership for a substantial proportion of the participants.

Belief in cover story. Given the bogus nature of both the classification and the comprehensive back story, we also decided to guide the participants through a funnel debriefing, in which we progressively probed the participants' belief in the cover story (e.g. Hepler & Albarracin, 2013). First, we asked open questions about the procedure (16.4%

indicated they found the procedure suspicious), then we asked more direct questions about the video (15.1% indicated they found the video suspicious), and finally we employed a multiple-choice question, in which we openly asked the participants if they found the backstory with two novel groups believable (about 33% indicated they did not find the distinction between ego and community-agents believable). Given the suspicion arousing questions in the beginning of the funnel debriefing and the guiding nature of the last multiple-choice question, we assume that the latter constitutes the most conservative measure of belief in the cover story. In the results section, we therefore explore the effect of belief in the cover story by using the last multiple choice question as a conditional background variable.

Results

IBM SPSS Statistics was used for all computations. A table of correlations between all included variables can be found in Appendix G. Assumptions for the linear models and inferential tests reported in this section seem to hold sufficiently well based on graphical inspection of the respective residual graphs. Excluding seven participants based on their monotonous response behavior (same answer on at least 38 consecutive items) did not shift the pattern of statistically significant results. The reported analyses therefore retain these participants. There were missing values for two participants due to an Internet outage in the lab. Given that these values can be regarded as missing completely at random (MCAR; i.e. no introduction of bias, see Heitjan & Basu, 1996) we decided to delete these cases from the affected steps in the analyses.

Manipulation checks

Global efficacy. The global efficacy manipulation had the intended effect. Participants in the high efficacy conditions (M=4.12, SD=1.6) scored significantly higher on the manipulation check than participants in the low efficacy conditions (M=2.25, SD=0.75; $t(295)=12.89$, $p<0.001$).

Local social support. The in-group outrage manipulation had the intended effect. Participants in the high local support conditions (M=5.77, *SD*=1.3) scored significantly higher on the manipulation check than participants in the low local support conditions (*M*=2.47, *SD*=1.43; *t*(295)=20.92, *p*<0.001). The global efficacy and local support manipulations had no effects on the manipulation check of the other factor respectively, nor did they interact on the two manipulation check scales (all *p*'s>0.31).

Collective action endorsement

We conducted a six-way linear mixed model analysis with global efficacy and local support as dichotomous between-subjects factors, group identification as a continuous predictor, and moderate vs. radical, individual vs. group, and anonymous vs. identifiable action as dichotomous within-subjects factors in order to test effects and interactions of group, person, and action characteristics on collective action output. For better readability, we decided to report the findings starting with main effects and ending with the qualifying higher order interactions.

Global efficacy. The effect of global efficacy on collective action was included in the mixed model to test the opposing hypotheses of SIT and NTL. The mixed model showed no significant main effect of the global efficacy manipulation on collective action endorsement. Further, in-group efficacy did not show significant interactions with the other variables in the model (all *p*'s≥0.094).

Local support. The effect of local efficacy, in the form of in-group support, on collective action was included in the mixed model to test the consistent hypotheses of SIT and NTL. The mixed model showed a marginally significant main effect of local support on collective action endorsements (*F*(1, 288)=3.63, *p*=0.058). A post-hoc independent-samples t-test confirmed that participants in the high local support conditions (*M*=2.86, *SD*=1.1) expressed higher collective action endorsement scores than the participants in the low local

support conditions (M=2.6, SD=1.04; t(295)=2.15, p=0.032). Local efficacy did not show any significant interactions with the other variables in the model (all p's≥0.12).

Characteristics of the collective actions. We included the effect of action characteristics on action endorsements in the mixed model to compare moderate and radical behavior (first characteristic), and assess preferences between group and individual (second characteristic), and identifiable and anonymous actions (third characteristic), respectively. An examination of main and interaction effects allowed us to screen the action endorsements for participants' strategic considerations as predicted by the SIDE model. All three dichotomous characteristics of the collective actions had a significant main effect on the respective collective action endorsement. Participants generally preferred moderate (M=3.3, SD=1.34) over radical actions (M=2.16, SD=0.93; F(1, 288)=604.3, p<0.001), group (M=2.76, SD=1.15) over individual actions (M=2.7, SD=1.06; F(1, 288)=5.47, p=0.02), and identifiable (M=2.87, SD=1.11) over anonymous actions (M=2.59, SD=1.1; F(1, 288)=88.61, p<0.001).

All three two-way interactions between the action characteristics also had a significant effect on the collective action endorsements (all F's(1, 288)≥10.01, all p's≤0.002). We performed post-hoc paired samples t-tests to assess the simple effects involved in the interactions. Participants showed no preference between group (M=3.29, SD=1.43) and individual actions (M=3.32, SD=1.34), when the actions were moderate (t(296)=0.88, p=0.38), whereas they preferred group (M=2.24, SD=1.01) over individual actions (M=2.08, SD=0.93), when the actions were radical (t(296)=5.31, p<0.001). Further, participants showed no preference between group (M=2.59, SD=1.15) and individual actions (M=2.59, SD=1.12), when the actions were anonymous (t(296)=0.14, p=0.89), whereas they preferred group (M=2.94, SD=1.22) over individual actions (M=2.8, SD=1.09), when the actions were identifiable (t(296)=3.48, p=0.001). Lastly, participants preferred identifiable (M=3.53, SD=1.45) over anonymous actions (M=3.08, SD=1.33), when actions were moderate (t(296)=10.7, p<0.001), but showed a weaker preference for identifiable (M=2.21, SD=0.93)

over anonymous actions (*M*=2.11, *SD*=1.02), when actions were radical (*t*(296)=3.32, *p*=0.001).

The three-way interaction between all included characteristics of the collective actions also showed a significant effect (*F*(1, 288)=8.85, *p*=0.003). We again performed post-hoc paired samples t-tests to assess the simple effects involved in the interaction. Participants changed from no preference between individual (*M*=3.54, *SD*=1.49) and group actions (*M*=3.52, *SD*=1.54) when the actions were moderate (*t*(296)=0.36, *p*=0.72) to a preference for group (*M*=2.36, *SD*=1.1) over individual actions (*M*=2.07, *SD*=0.9) when the actions were radical (*t*(296)=6.46, *p*<0.001; see two-way interaction above), but only when the actions were identifiable. When the actions were anonymous, participants again indicated no preference between group (*M*=3.05, *SD*=1.44) and individual actions (*M*=3.1, *SD*=1.35) when actions were moderate (*t*(295)=1.04, *p*=0.289), but also showed no preference for group (*M*=2.13, *SD*=1.07) over individual actions (*M*=2.08, *SD*=1.08) when actions were radical (*t*(296)=1.12, *p*=0.266). The three-way interaction further revealed that participants always preferred identifiable over anonymous actions (all *t*'s(296)≥5.05, all *p*'s≤0.001), but for cases in which the actions were radical and no fellow group members were present. In those instances identifiable action was no longer preferred over anonymous actions (*t*(296)=-0.33, *p*=0.742). A summarizing depiction of this three-way interaction is shown in Figure 1.

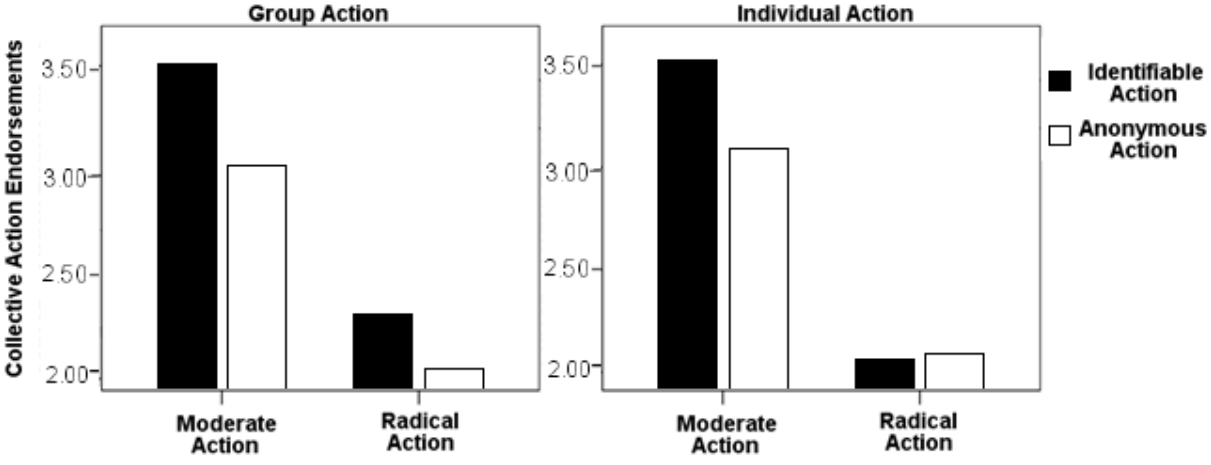

Figure 1. Depiction of the three-way interaction between all three within-subject factors on collective action endorsements.

Group identification. The effect of group identification on action endorsements was included in the mixed model to test the opposing hypotheses of SIT and NTL. Identification with the in-group had a significant main effect on collective action endorsement ($F(1, 288)=15.98$, $p<0.001$). A post-hoc regression analysis indicated that in-group identification is a positive predictor of collective action endorsement ($F(1, 295)$, $b=0.2$, $p<0.001$). This main effect was qualified by a significant interaction of the identification measure with the factor moderate vs. radical action. Post-hoc analyses of the simple slopes showed that identification is a positive predictor of collective action endorsement, when the actions are moderate ($F(1, 295)=27.84$, $b=0.3$, $p<0.001$), whereas identification is less strongly, albeit still positively, related to collective action endorsement, when the actions are radical ($F(1, 295)=4.97$, $b=0.09$, $p=0.028$; see Figure 2). No other variable in the mixed model analysis showed a significant interaction with group identification (all p's$\geq$0.09).

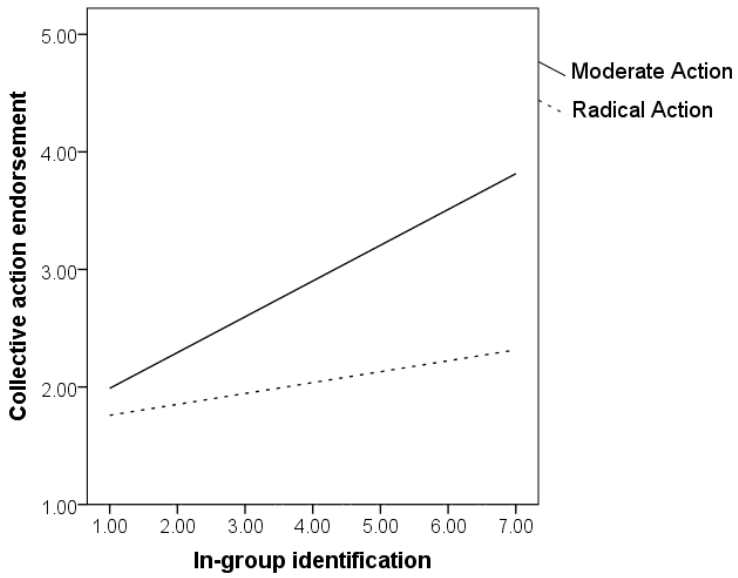

Figure 2. Interaction of group identification with moderate vs. radical action.

Believability considerations. We decided to redo the upper mixed model analysis under exclusion of participants that indicated at the end of the funnel debriefing that they did not believe in the distinction between community-agents and ego-agents. The pattern of significant effects from the upper analysis was replicated under exclusion of this subsample

with one exception. The main effect of in-group identification on collective action vanished ($F(1, 185)=2.75$, $p=0.099$). This 'falling away' of the effect is qualified by the factor moderate vs. radical action. In-group identification remained a significant positive predictor of moderate collective action ($b=0.17$, $t(191)=2.23$, $p=0.027$). However, in-group identification no longer predicted the endorsement of radical action ($b=0.004$, $t(191)=0.074$, p=0.941).

Intergroup emotions

In order to explore whether our manipulations of global and local efficacy affected the participants' emotions towards the antagonist out-group, we conducted a two-way MANOVA with global efficacy and local efficacy as dichotomous independent variables and all measured intergroup emotions as dependent variables. The analysis did not yield a significant result (all F's$(6, 285) <1.5$, all p's>0.18).

In order to test the effect of specific intergroup emotions on moderate and radical action, we performed two hierarchical regression analyses with anger and contempt as predictors and moderate and radical action as dependent variables, respectively. As in prior literature, anger and contempt showed a significant positive correlation ($r=0.45$, $p<0.001$). Moreover, both emotions are significantly correlated with moderate action endorsement (anger: $r=0.44$, $p<0.001$; contempt: $r=0.22$, $p<0.001$). However, adding contempt to a multiple regression model including anger as a predictor of moderate action endorsement did not add predictive value (R-squared change = 0.001, $F(1, 292)=0.31$, $p=0.581$). Similarly, both anger and contempt are significantly correlated with radical action endorsement (anger: $r=0.42$, $p<0.001$; contempt: $r=0.23$, $p<0.001$). However, adding contempt to a multiple regression model including anger as a predictor of radical action endorsement does not add predictive value (R-squared change=0.002, $F(1, 292)=0.68$, $p=0.41$). Redefining the radical

actions to only include physical violence or exchanging contempt with disgust as the second predictor does not change this pattern of results.

Discussion

The general pattern of results showed that radical action is indeed related to classic collective action mechanisms. However, regarding the effect of specific constructs, most notably in-group identification, a refinement of the social identity approach is required.

Local social support, as indicated by expressions of in-group outrage, emerged as a positive predictor of collective action regardless of whether the included behaviors were moderate or radical. This corroborates primarily the SIDE model, which proposes that local efficacy enables collective action that is disapproved by out-groups. Without local support, group members can more easily be caught, punished, or fail to implement their actions altogether. Additionally, in reaction to punishable actions, the unsupportive in-group could potentially oust the 'troublemakers' from the group for political reasons or because the actors violated in-group norms. Thus, in-group support remains an important positive predictor when transferring collective action theory to the field of radical action. This finding is further important as it partly alleviates the conflict between SIT and NTL, while explaining why prior studies found mixed result for both theories. NTL's opposition to SIT regarding the effect of efficacy on radical action should be respecified: *Local* efficacy is indeed a positive predictor of both moderate *and* radical action, as predicted by SIDE. However, if group efficacy is low on a *global* level, NTL predicts a desperate group radicalization and not apathy as proposed in SIT.

Global group efficacy in the given political system neither increased nor decreased collective action in our study. SIT's claim that without global group efficacy there won't be hope or scope for action remains equally unsupported as NTL's proposition that low global efficacy results in desperate endorsements of radical behavior. The most intuitive

interpretation of this finding is to claim a mutual suppression of NTL's 'radicalization of the desperate' and SIT's 'apathy of the hopeless'. However, we also did not observe positive effects of global efficacy on moderate behavior (as predicted by SIT), nor interactions of low global efficacy with high local efficacy on radical behavior (as predicted by NTL). Therefore, a closer look is warranted. The null finding in our study could potentially capture the ambiguous relationship between global efficacy and people's motivation for both moderate and radical action. Previous literature indicates that high efficacy motivates group members to engage, because the group goals are seemingly in reach (e.g. van Zomeren, et al., 2008). Conversely however, high group efficacy might lead individual group members to become apathetic, because one's own effort might seem redundant to attain collective goals ('free riding'; Stroebe & Frey, 1982). Similarly, high global efficacy might be expected to foster radical action, because power generally protects from retribution (Lickel, Miller, Stenstrom, Denson, & Schmader, 2006). However, radical action can also be seen as unnecessary under such conditions, because moderate political means are presumably sufficiently efficacious. In contrast to local efficacy, the effects of global efficacy remain highly uncertain, not only for radical behavior. Looking out in the real world, one must acknowledge that it is indeed both powerful and marginalized groups that resort to radical means. Examples include extrajudicial assassinations by powerful national governments and deadly attacks by small terrorist cells.

An additional complicating factor is that global efficacy, so the general potency of the group to attain its goals, can be understood and operationalized in many ways. We decided to manipulate the construct in form of high vs. low political influence in combination with majority vs. minority status (see political efficacy in Morrell, 2003). It is however also possible to more explicitly reference the efficacy of common collective actions like demonstrations or political campaigns. Such an operationalization would be further removed from *global* efficacy (and SIT's system instability), but more closely in line with the psychologically important efficacy of specific behaviors, which are often unrelated to a

group's political power. A final issue to consider for global efficacy is the method we applied. Using experimental lab studies like we did certainly allows for better control and causal inferences. However, the sense of global group efficacy might not lend itself easily to experimental manipulation. The feeling of group desperation after a history of oppression (NTL) or the feeling of group apathy under the absence of hope (SIT) are very profound experiences and might not fully come to life by watching a bogus eight-minute documentary. Complementary field studies on real groups might therefore be more suitable to investigate the effects of global efficacy. We conclude at this point that the effect of global group efficacy on different outlets of collective action remains uncertain and contested. *Local* efficacy emerges as a stronger and more reliable predictor of moderate and radical action than a group's general political efficacy.

A second point of disagreement between SIT and NTL concerns the effect of in-group identification. Following classic SIT, identification should predict a heightened readiness for collective action, whereas NTL proposes that this effect does not follow for radical actions. Our analysis shows that the effect of identification on collective action endorsement is indeed not constant across moderate and radical behavior. Regarding moderate action, high identifiers showed a much higher readiness for engagement than low identifiers. This effect did not fully reverse, but was significantly diminished for radical behavior. Thus, there seem to be concerns about the negative side effects of radical action that inhibit high identifiers. Our finding that high identifiers were still slightly *more* inclined than low identifiers to engage in radical action contrasts prior literature (Jiménez-Moya, et al., 2015). One reason might be that low identifiers in our study might not have considered themselves group members *at all*, while in the studies of Jiménez-Moya and colleagues they were undeniably group members (Andalusians, psychology students) and were, despite their low in-group identification, interested in attaining group goals. Support for this hypothesis is given by our analysis of the participants' varying belief in the cover story. When excluding the participants

that did not believe in the two-group split, that is the participants that presumably did not identify at all with community-agents, our results are more in line with prior literature. For this subsample, in-group identification remained a positive predictor for *moderate* behavior as agreed upon in prior theories. However, high identifiers were no longer more inclined than low identifiers to engage in *radical* action. While high identifiers generally have a strong drive to engage in action and attain group goals, radical behavior introduces dangers for their group image and associated self-concept. They might refrain from such behavior out of fear to damage the public image of the in-group. Moreover, radical behavior often violates group norms and might therefore lead to conflicts with the in-group. High identifiers are typically inclined to avoid such threats, because their self-concept is dependent on a positive group image in society and personal acceptance by the valued in-group. Thus, high identifiers have *something to lose* when engaging in radical action.

While our analysis seems to agree that highly identified group members are not more motivated to conduct radical action than low identifiers, which contrast collective action theories, we did not find that low identifiers are relatively *more* willing to engage in such extreme behaviors. We speculate that low in-group identification is not sufficient to elicit radical action, but that this effect only emerges if the low in-group identifiers highly identify with the group's *cause* (see group identification vs. politicized identification in Becker, et al., 2011; van Breen, Spears, Kuppens, & de Lemus, 2017). Under these conditions, low identifiers are highly willing to engage, but not restrained by concerns for the in-group or personal acceptance by the group. In such cases, the effect of in-group identification on collective action is presumably fully reversed for moderate and radical action. Thus, we maintain the prior claim that marginalized in-group members and loosely associated sub-groups are more prone to sever the group-society bonds through radical behavior ("lashing out") than highly identified group members. Prominent examples are Islamist terrorist groups that reportedly fight for their religion, but actively distance themselves from the general

Muslim community, which does not engage in violent jihad. Radical Muslims are usually highly committed to their interpretation of Islam and highly identify with other members of their splinter groups. However, they are often low identifiers in the sense that they do no longer identify themselves with the global community of Muslims, which they often believe is not radical enough. Accordingly, they feel less attached to the image of the broader in-group, while their sub-group gains in personal importance. High identification with the sub-group does *not* diminish radical behavior but promotes it, because it is normative and in-group approved. In sum, the effect of in-group identification on radical action is highly dependent on group boundaries, political constellations, and in-group norms. Thus, generic applications of SIT *and* NTL, that ignore this normative context, might lead to false predictions for the effect of in-group identification on radical actions.

Regarding the effect of intergroup emotions, the predictions of established theories fit our data better than new theory on radical action. As proposed in the dynamic dual-pathway model and general IET, anger seemed to be the primary emotion driving collective action, both moderate and radical. Our analyses showed that, even though contempt and disgust were also related to moderate and radical action output, they did not predict either behavior above and beyond anger. A further refinement of the radical actions to only include violent behavior did not entail a unique prediction by either contempt or disgust. This serves as strong support for the transferability of collective action theories to the field of radical action when examining intergroup emotions. Given the increasing evidence for the role of contempt, disgust, or hatred in the psychological literature on radical action, we speculate that these extreme emotions might be unique predictors only of the most radical behaviors. These actions not only include the application of violence, but further aim to deprive the victims of their human status. Examples might be genocide, torture, or war crimes such as rape or attacks against schools and hospitals. These behaviors were not included in our study. Another explanation might be that our Dutch participants did not fully understand the term

'contempt' given its relatively rare usage. Contempt might have been confused with the more popular term 'content' by some of the participants, which is a common nuisance in the research on contempt. Some support for this speculation is given through the surprising, positive correlation between contempt and admiration for the out-group (see Appendix G), which contrasts the common assumption that contempt is a downgrading emotion. However, that does not explain the equally unconfirmed unique effect of disgust. We conclude therefore that anger remains in many instances the primary driver not only of moderate but also radical behaviors.

The examination of the action characteristics and their respective effects on action endorsements provides additional support for the SIDE model. The comprehensive transferability of SIDE mechanisms to the field of radical action is not surprising as SIDE always had *punishable* behavior at its center. Participants showed profoundly strategic tendencies when endorsing radical actions. These strategic considerations were however discarded for the less risky (i.e. less punishable) moderate actions. Regarding moderate actions, participants showed no preference between group and individual engagements. Both types of behavior are potentially efficient to attain group goals, so participants had reason to endorse either. However, group engagement has multiple strategic benefits over individual engagement, such as immediate protection by the in-group and constant group-norm validation. These strategic benefits had no impact on moderate behaviors in our study, as they might not have been perceived particularly risky or punishable endeavors (for similar findings see Reicher & Levine, 1994). Radical action, on the other hand, warrants a more strategic approach. Our analysis showed that participants preferred to be in groups over being alone when carrying out radical actions. This is in line with prior research that indicates that group action is preferred over individual action when punishment or retaliation of the out-group is likely (Klein, Spears, & Reicher, 2007).

Similar indicators of strategic considerations emerged for the anonymity vs. identifiability of behavior. For moderate behaviors, participants strongly preferred identifiable over anonymous actions. Making yourself identifiable during collective engagement implies a personal, moral commitment to the cause and is less often tainted by feelings of unlawfulness. However, being identifiable has strategic shortcomings as one can more easily be targeted and punished by the out-group. Accordingly, the preference for identifiability diminished for radical behavior. Conversely to moderate actions, radical behavior is highly punishable and risky. Therefore, anonymity towards antagonist out-groups becomes more compelling and identifiability loses much of its appeal. Still, when looking only at the two-way interactions group members still preferred to be identifiable even for radical actions, despite the strategic drawbacks. The three way-interaction revealed however that the preference for identifiability over anonymity vanishes completely when the actions are not only radical, but when there are also no fellow group members present. Finding these profoundly strategic implementations of radical action further supports the SIDE model, which states that collective action is only realized when retribution by the antagonist can be prevented or overcome. Following our analysis, the SIDE model is the theory which receives the strongest support not only in the field of moderate but also radical action.

Limitations and methodological lessons

Given that we took a new methodological approach with a bogus personality test and documentary there are some lessons that we learned and that future researchers might find useful.

Our concern that participants would be highly suspicious towards the back story was not confirmed. Instead, they often integrated the claims of the documentary with their own world views and their own personal aversion towards ‘egoistic people’. The debriefing therefore had to be very thorough and we decided to administer it twice, once in written once

in oral form, to prevent that the false claims of the documentary were sustained in the participants. We further believe that an oral introduction and explanation of the procedure heightened the believability of the cover story. Still, a notable proportion of the sample indicated at the end of the study that they were suspicious. Even though this feeling did not seem to shift the results much, we know that suspicion changed the answers of individual participants. Exploring the comments on the study, we identify two main sources of disbelief in the cover story. Firstly, our video manipulation stated that *everyone* is either a community-agent or an ego-agent. This claim was identified as being too extreme and highly simplified, which elicited some suspicion in the cover story. The second major source of suspicion related to the judgmental tone of the video which came across as non-scientific and unfairly biased against ego-agents. Adjusting these two weak points in future studies can lead to a further increased believability of the cover story.

Future directions

The most pressing issue that is highlighted by our study is to clarify the effects of global efficacy on radical action. While the directionality of this effect remains highly contested, we want to explicitly consider at this point that indicators of global efficacy, such as political influence in society, might not have a generalizable effect on radical action. Being a member of a minority that has little say in the political arena and that gets exploited by out-groups might not be sufficient to elicit either apathy or radicalization. It might be wise to more directly manipulate or measure the hopelessness (SIT) or desperation (NTL) in the societal system to predict group behavior.

A second important avenue is to more directly include group norms in the empirical investigation. Our study manipulated group outrage as an indicator of normative group support, but a more refined indication of one's group's social identity content and action approval will certainly affect the endorsement of specific actions. Group norms are further

likely to affect the behavior of high and low identifiers in different ways, which would build on the findings in this study.

Conclusion

The general connection between established collective action theories and radical action is confirmed. Especially the SIDE model is highly applicable to behaviors that violate societal norms. The support of the in-group is important for the implementation of both moderate and radical behavior. This finding also helps to clarify the conflict between SIT and NTL over the effect of group efficacy on radical action. Past and future studies have to distinguish the contested effect of global efficacy from the unanimously positive effect of local efficacy. As further predicted by SIDE, strategic considerations, like in-group presence and anonymity, become increasingly important when the planned actions are punishable (i.e. shift from moderate to radical). SIT's claim that in-group identification fosters engagement seems to hold better for moderate than for radical action. The effect of in-group identification on radical behavior is small and might even reverse in certain contexts. Established theory should therefore be adjusted for radical behavior, as partly suggested by NTL. Conversely, established theory about the emotional facilitators of collective action is strongly supported as anger emerges as the primary driver of engagement, both moderate and radical. More extreme emotions, like contempt and disgust, did not provide additional predictive value for radical behavior. New research should therefore clarify the set of behaviors that are reportedly rooted in contempt and/or disgust. Lastly, general political efficacy was not predictive of action endorsements in the study, hinting at potential suppressor effects or a relatively higher importance of in situ efficacy for the prediction of group behavior. Together, our analyses show that research on radical action can be based on classic social identity research and especially the SIDE model. However, the prediction of radical action should take into account its unique features, which are not shared with accepted forms of collective action.

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Appendix

Appendix A: Introduction to the study

Hi everybody,

Thank you for coming.

I will read the instructions to you now to make sure that everyone is informed about the procedure.

Firstly, please switch off your phones so you and others do not get distracted. Airplane mode is fine too.

This study will be conducted individually on the computers in the small cabins over there.

I will show you where to sit in a second.

Throughout the study it is important that you don't stand up or make a lot of noise, because other participants might get distracted. If you have questions or when you are finished with the study, please open the doors quietly and come to me in this room.

The first step of this study will be that you generate an anonymous identification code for yourself.

This ensures that nobody (including us) knows which of the collected data belong to you.

The instructions are given on the computers.

After that, there will be a short, simple test that classifies you as either a community agent or an ego agent. Your test result will be presented and explained to you on the computer screen.

Then, you will see an eight-minute video that describes what we already know about the two groups, community agents and ego agents. This video is owned by the Youtube channel of the European Psychology Magazine, where it will be published next month.

After you finished watching the video, there will be questions about the content of the video, very basic and simple questions, and about your future behaviour towards the opposite group, so the group that you do not belong too.

After you are done with the study, please quietly open the door and come back to this room here.

Learning which group you belong to and the behavior of the two groups might be a little unsettling, which is why there will be time to ask questions at the end of the study.

Are there any questions?

-questions

-consent

-hint: scroll down after video

Appendix B: Anonymous code procedure for participants

Please generate an anonymous code.

This will be used instead of your name.

Through this procedure we guarantee that none of your answers can be linked to your identity.

First letter: Put in the first letter of the name of a singer/artist (Rihanna; Andrea Bocelli)

Second letter: Put in the third letter of an animal (dog; kangaroo)

Third letter: Put in the last letter of a name which is not yours (Dave; Mary)

Fourth letter: Put in a random digit (0; 1; 2; 3; 4; 5; 6; 7; 8; 9)

Fifth letter: Put in a different random digit

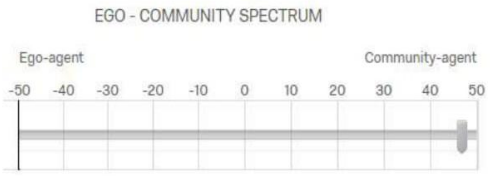
(Examples: "tla89", "jtn01", "pur43")

Appendix C: Standardized test score sheet

TEST EVALUATION

Participant-ID: **huhuh**
Date: 26/05/2017

Score	48
Diagnosis	**COMMUNITY-FOCUSED PERSON**
Person-Group-Fit	97%
Probability of ego-focused personality	<1%



The questions that you just worked on are a diagnostic tool designed by researchers at this University.
According to your answers you are a COMMUNITY-FOCUSED person.

Some people are community-focused, while others are ego-focused.

You can learn about what this means in the video on the next page.

At the end of the study, you will also have a chance to ask questions to the lab supervisor.

(The video is property of European Psychology Magazine and is not to be published before April 2017)

See Video

Powered by Qualtrics

Appendix D: Items of bogus association test

Instructions: In this part of the study you will be repeatedly presented with a bold key word. Below the key word there will be 4 other words. Your task is to choose and click on the word that you associate most strongly with the key word. There are no right or wrong answers, but concentration is important. Simply click on the option that you sponaneously relate to the key word. If you have urgent questions, open the door quietly and ask the lab supervisor.

Key word: Love

- Commitment
- Partner
- Passion
- Good

Key word: Hatred

- Violence
- Enemy
- Mean
- Bad

Key word: People

- Nation
- Crowd
- Culture
- Union

Key word: Together

- Bond
- Team
- Friends
- Power

Key word: Force

- Physical
- Military
- Evil
- Strong

Key word: Politics

- Leadership
- Media
- Law-making
- Democracy

Key word: Social

- Friendly
- Fun
- Network
- Activities

Key word: Growing

- Mature
- Adult
- Character
- Change

Key word: Profit

- Money
- Gain
- Business
- Good

Key word: Human

- Rights
- Strength
- Morals
- Compassion

Key word: Exploitation (transl. Ausbeutung; exploitatie)

- Wrong
- Violation
- Condemnable
- Anti-social

Appendix E: Video script and links

The videos are not listed (i.e. cannot be found on YouTube by a user, who does not have access to the direct URL Link).

Low efficacy, low outrage condition: https://youtu.be/pnV8uZgFNxg

Low efficacy, high outrage condition: https://youtu.be/_xXNO0wtLaM

High efficacy, low outrage condition: https://youtu.be/1eUu12PXAdY

High efficacy, high outrage condition: https://youtu.be/uuP85Jbez4w

Script:

Green blurry opening screen:

Short, simple jingle (few and subtle sounds)

*Written text: "*magazine name Research Reports*

epmagazine.com

facebook.com/epmagazine"

Unfocused picture in background

Start background music

Fade in text: "*Welcome" "Episode 4" "The two group model"*

"Welcome, - to another episode of research reports. Here we present big discoveries – in psychological research. This time, we introduce two groups that make up all of society, but that we were completely unaware of, until recently. The researchers called the first group community-focused people and the second group ego-focused people.

Fade in text: "community focused people" "Ego focused people"

"Community focused people, or community-agents, are people who are motivated to help others. - While Ego-focused people, or ego-agents, are only interested in maximizing their own profit. This often leads to substantial conflict, between community agents - and ego agents."

Slide in two figure, with two colours on opposing sides

World map

Magnifying glass gliding over map, exposing figures

"We are just starting to learn about the two groups and scientific publications won't come out

until later this year. Researchers from the University of Groningen..."

pin falls down onto Groningen location

"...and the University of Princeton -"

pin falls down onto Princeton location

"produced conclusive evidence for their two group theory in 2016. - At the moment, they are still busy conducting experiments and studies on community-focused - and ego-focused people. According to the researchers, everybody in society..."

"...belongs into one of these *groups*."

stick men pop up all over the globe

Part of the stick men are blue; the others are red

"Unfortunately, there is an ongoing, hidden conflict between members of the two parties."

Stick men fight with each other.

Blurred background

Fade in question marks

*"*Now, if you are watching this video on the youtube channel of our magazine,"

Slide in: "youtube.com/epmagaizine"

"…you probably have a lot of questions at this point. Questions like: What are these groups?"

Type out question

"Why are they in a conflict?"

Type out question

"And most importantly, how do I know what group I am in?"

Stick man pops up with question marks and changing colours

"We asked the two main researchers on this topic, Professor Paula Moore and Professor Russell Spears."

Show names and university symbols plus department

"and they were kind enough to answer some of these questions for our channel."

White/grey background

Fade in question "What group do I belong to?"

Put in picture of stereotypical professor next to the audible text scrolling down upper and lower part of text blurry

"I think this might be one of the biggest problems and one of the most detrimental sources of conflict in the world, simply because it happens everywhere, all the time, and people are unaware of it. Look at the greedy bankers who brought the devastating financial crisis, look at slave holders, political oppression, crimes against the environment, corruption. They are all the result of ego-centred people. So far we thought they were just some bad apples, but now we know that there is one distinct group who causes this and one group that suffers. Luckily, we now learn to distinguish the two groups, so something can be done about it in the future."

Prof Spears in frame sitting at desk

Fade in question: "What is the difference between ego agents and community agents?"

Russell: "We already have increasingly accurate tests that we use in our studies to classify people according to this typology. These will soon be available also on the Internet so people are able to diagnose which group they belong to. But in most cases that won't even be necessary, because we are developing ways to classify people based on other easily available information sources. Given the data available from social media and other data-rich sources, there is already enough information to reliably classify most people. In short, in the future you will be able to find out quite easily who's who and which group you belong to. This is the issue we are working on right now."

Background: changing pictures war, wall street, deforestation, poor child, homeless person

"The researchers already linked many devestating conflicts, - social problems, - and economic troubles in recent history - to political and corporate leaders - that very likely could be diagnosed - as ego-focused."

Pictures of dictators, authoritarian leaders, and stereotypical wall street people

Merging into red stick man

"So far, it has unfortunately been difficult to tell which group somebody belongs to."

Stick man's colour alternates between red and blue. Goes back to black

"Recently however, the researchers have developed tools - to successfully classify people based on *tests*..."

Paper sheet appears next to stick man

"...behavioural tendencies like habits..."

Social media (or logos), hobbies

"...and biographical data like job or gender."

briefcase, gender symbols, age appears

All symbols are sucked into a computer which spits out 'Ego-agent 95% Fit'

Stick man turns red

"It turns out - that ego-agents often try to become chiefs of corporations..."

Thinking bubble containing money

“or political leaders...”

Thinking bubble containing crown

“...and generally aspire to positions that give them power over others.”

Crowd of smaller black stick men appear under red stick man

“There are of course also community agents in these positions, but not as many.”

Stick man turns blue

“And they are not there for *egoistic* reasons, but more often to support their employees or be a role model.”

Stick man turns red

“Ego-focused people use their power exclusively for their own benefit - which often does a great deal of damage to people around them - mostly community-agents who work for their businesses or who are affected by the bad consequences of ego-agent decisions."

Crowd turns blue

White blurry background

Display Basket of apples

“Remember the apple analogy of Professor Moore. When looking at violence, - oppression, - and economic discrimination - the responsible people - are **not** just some random bad apples.”

Some apples turn brown/black

“This new research shows: they actually belong to a distinct group. A separate batch of apples if you will.“

Basket morphs into two baskets; one with good one with bad apples

Group of blue stick men appear behind good apples; group of red people appear behind bad apples

“So far, ego-agents benefitted from people’s lack of knowledge of the two groups, even though they were *equally* unaware of it. As a result, they could easily exploit their environment - individually.”

Prior red people grin

Two groups turn black, merge

“However, here is where the current research steps in. In the near future, people’s group membership will be identifiable.”

Grin turns upside down

“According to the researchers, especially people that have a lot of power...”

One frowning stick man rises over others

"...automatically generate a lot of public data through their behaviors and can therefore be classified without problems."

Stick man turns red

"Another encouraging finding is that people actually do not need professional tests to realize who belongs into which group. They are unconsciously drawn to fellow group members - and rarely develop positive relationships with people from the other group. This is why friend circles and families are often exclusively community-focused or ego-focused."

Black crowd splits into two

One turns red, the other turns blue

FROM HERE: MANIPULATIONS; 4 DIFFERENT VIDEO VERSIONS

Efficacy

Paper background

Low Efficacy "One thing we know for sure at this point is that the proportion of community and ego agents is by no means 50:50. The researchers were quite surprised to find that the groups actually differ enormously in size. Experts agree that the overwhelming majority of people is ego-focused." Around 85%. While only a mere 15% are community-focused. That means that ego-agents have a lot more power and community-agents have difficulties in the political arena."

Dynamic pie chart showing proportions, chart is accompanied with a high amount of grinning red stick men and few blue stickmen

High Efficacy "One thing we know for sure at this point is that the proportion of community and ego agents is by no means 50:50. The researchers were quite surprised to find that the groups actually differ enormously in size. Experts agree that the overwhelming majority of people is community focused." Around 85%. While only a mere 15% are ego-focused. That means that community-agents have a lot more power and ego-agents have difficulties in the political arena."

Dynamic pie chart showing proportions, chart is accompanied with a high amount of grinning blue stick men and few red stick men

Outrage

Low outrage "Researchers also investigated the reactions of community-agents when hearing about the oppression by ego-agents. Around 78%, so over three quarters of community-focused people said they were not upset at all about it."

Blue stick man rising up. Thinking bubble repeatedly displays three dots. Stick man descends out of frame again.

"We met one of the participants of this study when interviewing Professor Spears in Groningen."

Video of a young woman (student age, blurred face) sitting in an office like room, picture label says 'Community agent (21)'

Woman: "I don't really care about this. I know that there are very bad people out there and that nice people get exploited, but I don't know, when I hear about it I don't really get upset by that."

High outrage "Researchers also investigated the reactions of community-agents when hearing about the oppression by ego-agents. Around 78%, so over three quarters of community-focused people said they were very upset (not upset at all) about it."

Blue stick man rising up. Thinking bubble repeatedly displays three exclamation marks. Stick man descends out of frame again.

"We met one of the participants of this study when interviewing Professor Spears in Groningen."

Video of a young woman (student age, blurred face) sitting in an office like room, picture label says 'Community agent (21)'

Woman: "I really care a lot about this. I know that there are very bad people out there and that nice people get exploited. I don't know, It really upsets me."

Blurred background from beginning of video

Display text: "European Psychology Magazine"

Show to stick men with different colours

"Only time will tell how the world reacts when the researchers publish their full report later this year."

Low efficacy low outrage

"If you have further questions like why community agents fail in political elections"

Reshow pie chart

"Or why they are not upset about the damaging behaviour of ego-agents..."

Reshow stick man with thinking bubble

"visit our website under epmagazine.com"

Low efficacy high outrage

"If you have further questions like why community-focused people fail in political elections"

Reshow pie chart

"Or why they are so upset about the damaging behaviour of ego-agents...."

Reshow stick man with thinking bubble

“visit our website under epmagazine.com”

High efficacy low outrage

“If you have further questions like why community-focused people succeed in political elections”

Reshow pie chart

“Or why are they not upset about the damaging behaviour of ego-agents...”

Reshow stick man with thinking bubble

“visit our website under epmagazine.com”

High efficacy high outrage

“If you have further questions like why community-focused people succeed in political elections”

Reshow pie chart

“Or why they are not upset about the damaging behaviour of ego-agents...”

Reshow stick man with thinking bubble

“visit our website under epmagazine.com”

Appendix F: Collective action scales and reliability tests

Individual, moderate, identifiable action (Cronbach's alpha=0.838)

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Criticize and challenge ego-agents in public.	.675	.796
Verbally confront ego-agents about their oppressive and ego-centred behaviour.	.606	.815
Openly boycott businesses that are led by ego-agents and that exploit others.	.572	.824
Publically question the reputation of specific ego-agents.	.727	.783
Sign a petition to investigate any criminal activity by ego-agents.	.633	.809

Individual, radical, identifiable action (Cronbach's alpha=0.642)

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Insult and verbally attack ego-agents in public.	.469	.575
Violently confront ego-agents because of their oppressive and ego-centred behaviour.	.399	.600
Openly vandalize businesses that are led by ego-agents and that exploit others.	.407	.588
Publically derogate the reputation of specific ego-agents.	.546	.502
Sign a petition to jail ego-agents for any criminal activity.	.306	.676

Individual, moderate, anonymous action (Cronbach's alpha=0.802)

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Write slogans with chalk on walls in the city centre after dark to mobilize others against ego-agents.	.465	.798
Donate money to community-focused activists who raise awareness about the wrongdoings of ego-agents.	.674	.734
Debate anonymously with ego-agents on the internet.	.409	.818
Anonymously print flyers to inform everybody about wrongdoings committed by ego-agents.	.687	.730
Donate money to activist groups who publicize crimes of ego-agents.	.717	.720

Individual, radical, anonymous action (Cronbach's alpha=0.769)

	Scale Mean if Item Deleted	Cronbach's Alpha if Item Deleted
Write slogans with spraycans on walls in the city centre to mobilize others against ego-agents.	8.58	.740
Donate money to community-focused activists committed to naming and shaming influential ego-agents.	7.91	.704
Intimidate and troll ego-agents anonymously on the internet.	8.55	.738
Anonymously print flyers to inform everybody about wrongdoings, and names and addresses of ego-agents.	8.31	.720
Donate money to hacker groups who sabotage the businesses of ego-agents.	8.41	.730

Group, moderate, identifiable action (Cronbach's alpha=0.878)

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Demonstrate against exploitation by ego-agents.	.779	.835
Form groups and protest in front of buildings of organizations associated with ego-agents (e.g. specific financial institutions).	.749	.842
Participate in public debates between the two opposing groups.	.562	.886
Join groups of community-focused people that gather information about the wrongdoings of ego-agents.	.740	.844
Occupy public places with other community-focused people to protest against exploitation by ego-agents.	.723	.849

Group, radical, identifiable action (Cronbach's alpha=0.766)

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Riot against exploitation by ego-agents.	.568	.712
Form groups and vandalize buildings of organizations associated with ego-agents (e.g. specific financial institutions).	.494	.740
Participate in confrontations between the two opposing groups.	.542	.728
Join groups of community-focused people that punish ego-agents for their wrongdoings.	.571	.712
Occupy property of known ego-agents with other community-focused people to protest against exploitation by them.	.535	.724

Group, moderate, anonymous action (Cronbach's alpha=0.816)

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Secretly gather with other community-agents to identify businesses of ego-agents.	.651	.762
Make an anonymous group video in which you request an end of the oppression of your group.	.577	.795
Join a group of anonymous activists who support victims of ego-agent oppression.	.641	.768
Join a group which anonymously publicizes oppression by ego-agents.	.681	.746

Group, radical, anonymous action (Cronbach's alpha=0.743)

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Secretly gather with other community-agents to sabotage businesses of ego-agents.	.591	.652
Make an anonymous video in which you threaten ego-agents who oppress your group.	.457	.734
Join a group of anonymous activists who punish ego-agents for oppressive acts.	.593	.651
Join a group which anonymously leaks confidential information about oppression by ego-agents.	.562	.685

Appendix G: Correlation table

Correlations

	age	IMI	IMA	IRI	IRA	GMI	GMA	GRI	GRA	Anger	Disgust	Contempt	Fear	Admiration	Respect	Identi-fication	Belief in cover story
age	1	-.036	-.048	-.007	.007	-.023	-.042	.012	.042	-.074	-.093	.017	-.081	-.147*	-.067	-.117*	.128*
IMI	-.036	1	.77**	.65**	.602**	.826**	.726**	.665**	.64**	.425**	.442**	.251**	.266**	-.061	-.113	.279**	-.288**
IMA	-.048	.767**	1	.63**	.707**	.835**	.823**	.708**	.70**	.425**	.364**	.181**	.254**	-.072	-.148*	.293**	-.328**
IRI	-.007	.649**	.63**	1	.760**	.573**	.573**	.728**	.72**	.405**	.382**	.194**	.230**	.027	-.120*	.103	-.336**
IRA	.007	.602**	.71**	.76**	1	.590**	.652**	.742**	.79**	.376**	.325**	.237**	.196**	.046	-.122*	.095	-.272**
GMI	-.023	.826**	.84**	.57**	.590**	1	.829**	.706**	.64**	.412**	.394**	.182**	.265**	-.070	-.146*	.265**	-.288**
GMA	-.042	.726**	.82**	.57**	.652**	.829**	1	.713**	.69**	.356**	.362**	.208**	.256**	-.052	-.080	.243**	-.332**
GRI	.012	.665**	.71**	.73**	.742**	.706**	.713**	1	.75**	.394**	.349**	.183**	.226**	.008	-.106	.162**	-.292**
GRA	.042	.635**	.70**	.72**	.794**	.636**	.687**	.747**	1	.331**	.262**	.197**	.200**	.068	-.083	.100	-.231**
Anger	-.074	.425**	.43**	.40**	.376**	.412**	.356**	.394**	.33**	1	.777**	.445**	.579**	.075	-.108	.295**	-.287**
Disgust	-.093	.442**	.36**	.38**	.325**	.394**	.362**	.349**	.26**	.777**	1	.437**	.563**	.087	-.113	.319**	-.245**
Contempt	.017	.251**	.18**	.19**	.237**	.182**	.208**	.183**	.20**	.445**	.437**	1	.337**	.252**	.208**	.250**	-.174**
Fear	-.081	.266**	.25**	.23**	.196**	.265**	.256**	.226**	.20**	.579**	.563**	.337**	1	.145*	.004	.261**	-.240**
Admiration	-.147*	-.061	-.072	.027	.046	-.070	-.052	.008	.068	.075	.087	.252**	.145*	1	.500**	-.110	-.039
Respect	-.067	-.113	-.15*	-.12*	-.122*	-.146*	-.080	-.106	-.083	-.108	-.113	.208**	.004	.500**	1	-.008	-.018
Identification	-.117*	.279**	.29**	.103	.095	.265**	.243**	.162**	.100	.295**	.319**	.250**	.261**	-.110	-.008	1	-.302**
Belief in cover story	.128*	-.29**	-.33**	-.34**	-.27**	-.288**	-.332**	-.292**	-.23**	-.287**	-.245**	-.174**	-.240**	-.039	-.018	-.302**	1

IMI=individual moderate identifiable; IMA=individual moderate anonymous; IRI=individual radical identifiable; IRA=individual radical anonymous; GMI=group moderate identifiable; GMA=group moderate anonymous; GRI=group radical identifiable; GRA=group radical anonymous

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).