University of Groningen

Dynamic reactions to opinion deviance

Jans, Lise; Koudenburg, Namkje; Dillmann, Jeremy; Wichgers, Lisanne; Postmes, Tom; den Hartigh, Ruud J. R.

Published in:
Journal of Experimental Social Psychology

DOI:
[10.1016/j.jesp.2019.04.001](https://doi.org/10.1016/j.jesp.2019.04.001)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2019

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Jans, L., Koudenburg, N., Dillmann, J., Wichgers, L., Postmes, T., & den Hartigh, R. J. R. (2019). Dynamic reactions to opinion deviance: The role of social identity formation. *Journal of Experimental Social Psychology*, 84, [103803]. <https://doi.org/10.1016/j.jesp.2019.04.001>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Dynamic reactions to opinion deviance: The role of social identity formation[☆]

Lise Jans^{a,*}, Namkje Koudenburg^{a,1}, Jeremy Dillmann^{a,2}, Lisanne Wichgers^{b,3}, Tom Postmes^{a,1}, Ruud J.R. den Hartigh^{a,1}

^a University of Groningen, the Netherlands

^b University of Amsterdam, the Netherlands

ARTICLE INFO

Handling editor: Chennai Guest Editor

Keywords:

Opinion deviance
Moral deviance
Social identity formation
Belongingness
Rejection
Minority influence
Dynamical approach
Mouse paradigm

ABSTRACT

When someone expresses a morally deviant opinion, this person is likely to face derogation by their group. We examined whether people reacted more positively to opinion deviance when social identity was induced from individual expressions, rather than deduced from ingroup similarities. Participants ($n = 155$ divided over 41 groups) engaged in small-group conversations. We manipulated social identity formation (induction vs. deduction) and the presence of deviance (vs. agreement), without using confederates. We directly compared reactions to opinion deviance for both normative positions (i.e., for the deviant and the normative group members). Questionnaires assessed group-members' belongingness and personal value to the group. Innovatively, we also tracked moment-to-moment levels of belongingness throughout the conversation. We tested whether the responses of the deviant compared to normative group members differed depending on social identity formation. Overall, deviants experienced lower belongingness after opinion deviance than normative group members. However, the trajectories over time suggest that deviants began to recover their belongingness in inductively formed groups, but not in deductively formed groups. Furthermore, in inductively formed groups deviants were perceived to be more valuable to the group, than they were in deductively formed groups. Exploratory analyses on the effect of social identity formation on normative group members' trajectories of belongingness further suggest that being normative may be particularly beneficial when social identity is deduced. Results are discussed in terms of theoretical implications and the value of dynamic tracking as a methodology to examine small group processes.

When someone expresses a deviant opinion on a morally laden topic, this person is likely to face derogation by their group (Festinger, 1950; Levine & Kerr, 2007; Marques & Paez, 1994). However, this is not always the case: Sometimes, deviance can be the first step towards social change (Jetten & Hornsey, 2011; cf. Moscovici, 1976). For example, a group member advocating a vegan diet may face derogation (cf. Minson & Monin, 2012), but may also inspire others to make more sustainable choices (cf. Bolderdijk, Brouwer, & Cornelissen, 2018). We aimed to identify the conditions under which groups are more or less tolerant of moral deviants. We propose that reactions to opinion deviance depend on the process by which groups form. Prior research shows that certain groups are founded upon the unique individual

contributions of group members, through a process of *induction*. In such groups, deviance may not necessarily be threatening. We make innovative use of a mouse paradigm to track the dynamics of group members' subjective reactions to the discovery of deviance, from the perspective of both the deviant and the rest of the group.

1. Reactions to opinion deviance in small groups

Opinion deviance can be defined as “an opinion expressed by a minority of group members that differs from the modal opinion of a physically present or realistically simulated majority of group members” (Levine, 1989, p.188). In groups, such deviance often involves the

[☆] We thank Rebecca Sargisson for proofreading our paper.

* Corresponding author at: Department of Social Psychology, University of Groningen, Grote Kruisstraat 2/1, 9712, TS, Groningen, the Netherlands.

E-mail address: l.jans@rug.nl (L. Jans).

¹ Dept. of Social Psychology, University of Groningen.

² Dept. of Developmental Psychology, University of Groningen.

³ Dept. of Political Communication and Journalism, University of Amsterdam.

violation of group norms, for example, when a group member differs in opinion from the group prototype (Jetten & Hornsey, 2014). In the present paper, we focus on opinion deviance by one group member on a topic that raises questions about what is morally wrong or right, where normative concerns are especially likely.

In many cases, reactions to opinion deviance in small groups are negative (Levine, 1989; Levine & Kerr, 2007). Deviants are subjected to conformity pressures and are less liked than normative group members. The more extreme the deviance, the more negatively it is evaluated. Both the deviant and the rest of the group tend to react negatively to opinion deviance (Levine & Kerr, 2007). The experience of being deviant is negative, mainly because deviance puts one at risk of social exclusion. For the rest of the group, the presence of a deviant is negative because unity is positively valued and group members should abide by the group's norms. Deviance seems to threaten the group's shared identity (in terms of clarity of position and positive distinctiveness, cohesion, and group locomotion), and deviant group members may be ousted to restore this threatened shared identity (Jetten & Hornsey, 2014).

Sometimes, however, deviants are held in esteem and considered valuable to the group (Coser, 1962; Dentler & Erikson, 1959; Ellemers & Jetten, 2013; Jetten & Hornsey, 2014; Levine & Marques, 2016). For example, groups that value diversity regard deviants more positively (Hutchison, Jetten, & Gutierrez, 2011). Deviants can be celebrated as innovators who enhance the group's creativity or performance (cf. De Dreu, 2002; De Dreu & West, 2001), and can innovate the groups' normative practices (Ellemers & Jetten, 2013; Moscovici, 1976; Prislín & Christensen, 2005). Indeed, deviating group members sometimes feel morally compelled to deviate from the group, because they believe that current group practices are immoral or 'wrong' (Monin, Sawyer, & Marquez, 2008). By expressing deviance, deviants hope to better their group (Hornsey, 2005, 2006; Packer, 2008). A classic example is the minority group member who challenges the group's traditional viewpoints, in the hope of initiating social change (Moscovici, 1976). In sum, groups' handling of deviants is not uniformly negative: Although deviants may often be rejected, sometimes their efforts to innovate and improve are rewarded and valued. This raises the question; under which conditions are groups more or less likely to be tolerant of deviance?

2. Social identity formation and being different

The idea that deviants are rejected because they threaten the group's identity stems from the social identity approach; self-categorization theory in particular. According to self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), group members perceive themselves in terms of a shared stereotype that defines their in-group, often in contrast to an outgroup. The categorization of self and others in terms of shared group membership is more likely when differences within the group are small. When deviating group members undermine the perception of one's group as a positively distinctive category, high identifiers, in particular, will react negatively (cf. Marques, Abrams, Paez, & Hogg, 2001). Indeed, deviants from one's ingroup tend to be judged more harshly than out-group deviants (the black sheep effect; Marques, Yzerbyt, & Leyens, 1988). But, although ostensibly logical, the assumption is that the process of self-categorization is the *only* way for social identities to form and become salient.

There is actually evidence of *two* pathways to social identity formation, in groups ranging from small to large (Postmes, Baray, Haslam, Morton, & Swaab, 2006; Postmes, Haslam, & Swaab, 2005). The first pathway is called *deductive* social identity formation: Here, as described above, social identities are deduced from in-group commonalities and between-group comparisons (Postmes, Haslam, & Swaab, 2005; see Turner et al., 1987). *Inductive* social identity formation is the second pathway: Here, shared social identity is inferred from idiosyncratic individual contributions of group members, because they complement

each other or because they establish mutual interdependence (Postmes, Spears, Lee, & Novak, 2005; Swaab, Postmes, & Spears, 2008; Jans, Postmes, & Van der Zee, 2011, 2012; Koudenburg, Postmes, Gordijn, & Van Mourik Broekman, 2015; see also Gaertner, Iuzzini, Witt, & Oriña, 2006). In the second, bottom-up process, similarity is not the basis for social identity formation.

In the present paper, we propose that the reception of deviants by inductively formed groups may be less hostile than by deductively formed groups, because similarity and uniformity are less important to the former than the latter (see also Durkheim, 1984; Prentice, Miller, & Lightdale, 1994; Wilder & Simon, 1998). Indeed, previous research suggests that the distinctiveness of group members fosters rather than obstructs inductive social identity formation (Jans et al., 2011, 2012; Koudenburg et al., 2015; Postmes, Spears, et al., 2005). For example, inductive social identity formation is stronger when groups are perceived as heterogeneous, rather than homogeneous (Jans et al., 2012). Furthermore, one of the underlying mechanisms of successful inductive social identity formation is the perception of oneself as distinct within the group and valuable to the group (Jans et al., 2011; Koudenburg et al., 2015; Van Mourik Broekman, Gordijn, Koudenburg, & Postmes, 2018). Notably, this process can also take place in much larger groups (Van Mourik Broekman, Koudenburg, Gordijn, Krans, & Postmes, 2019) and larger social categories can also be perceived as having a more inductive character (Jans et al., 2011). There is also some evidence that group members have more unique and distinctive ideas when their shared identity is formed inductively, rather than deductively (Koudenburg et al., 2015). Together, in groups (or social categories) with an induced shared identity, unique individual contributions are fundamental to the group's shared identity. Hence, being different from other group members is less problematic; instead, it may be positively valued.

3. Present research

So far, research on inductive social identity formation has focused on forms of diversity that are manifested during the group formation process itself, such as perceived differences in personality (Jans et al., 2012). It is an open question whether groups with an established identity (whether induced or deduced) are equally tolerant when suddenly faced with a morally deviant group member, who would be particularly likely to face rejection (cf. Monin et al., 2008). In this paper, we examine whether reactions to a sudden confrontation with opinion deviance on a moral domain are less negative when social identity is induced rather than deduced.

We conducted a small-group experiment, in which we manipulated social identity formation (induction vs. deduction) and opinion deviance (agreement vs. deviance) within the group. Most research on reactions to opinion deviance has either focused on reactions to opinion deviance by the group or by the deviant. Yet, it has been suggested that the deviant may react more strongly than the group to opinion deviance and potential inclusion or exclusion, as the group has more control over the inclusion/exclusion process than the deviant has (cf. Abrams, Hogg, & Marques, 2005; Levine & Kerr, 2007). We allowed groups to have a natural discussion, and compared the reactions to opinion deviance of both the deviant and normative group members. We believed it would be instructive to compare the reactions of these two normative positions (i.e., the deviant vs. normative group members) when confronted with opinion deviance, and to describe how opinion deviance affects perceptions of belongingness and personal value to the group for each.

In line with the theory above, we predict that opinion deviance is reacted to more negatively in deductively formed groups, because, here, the disruption of unity is threatening the group's identity. Conversely, in inductively formed groups, unique individual contributions are integral to the group's shared identity, and therefore we predict group members will remain tolerant of deviants and value their contributions to the group more positively. Specifically, we expected

the deviant to belong less to the group than normative group members in deductively formed groups, but not in inductively formed groups (H1). In contrast, we expected the deviant to be more valuable to the group than normative group members in inductively formed groups, but not in deductively formed groups (H2). We explored whether deviants react more strongly to opinion deviance than normative group members do (cf. Levine & Kerr, 2007). We also explored the impact of opinion deviance on normative group members and whether it depends on how social identity is formed, by comparing reactions to opinion deviance to responses when there is agreement in the group.

Another of our important aims was to track reactions to opinion deviance continuously during the conversation about the moral issue. Small groups can be considered complex, adaptive, and dynamic systems (e.g., Arrow, McGrath, & Berdahl, 2000; Gorman, Dunbar, Grimm, & Gipson, 2017; McGrath, Arrow, & Berdahl, 2000). Furthermore, social identity (e.g., Bouas & Arrow, 1995; Jans, Leach, Garcia, & Postmes, 2015) and reactions to deviance may change over time (Schachter, 1951; Wesselmann et al., 2014). However, little is known about the differential development of these reactions for the deviant and the rest of the group. We therefore made novel use of the mouse paradigm (cf. Briki, Den Hartigh, Bakker, & Gernigon, 2012; Gernigon, d'Arripe-Longueville, Delignières, & Ninot, 2004; Vallacher, Nowak, Froehlich, & Rockloff, 2002) to track group members' experiences of belongingness moment-to-moment after opinion deviance occurred. This allowed us to dynamically examine the effect of social identity formation in conjunction with deviance on the experience of belongingness of the deviant and normative group members. Specifically, we were able to explore whether deviants in inductively formed groups were initially less affected by the discovery of their opinion deviance than deviants in deductively formed groups, or whether they were better able to recover from this negative experience.

In Step 1, we tested our hypotheses by comparing the responses of deviants and normative group members in inductively formed groups with their responses in deductively formed groups. In Step 2, we explored the impact that opinion deviance has on normative group members by comparing their responses to opinion deviance with their responses when there was agreement within inductively and deductively formed groups.

4. Method

4.1. Participants and design

Undergraduate psychology students ($N_{\text{women}} = 136$, $N_{\text{men}} = 34$, $M_{\text{age}} = 19.21$, $SD_{\text{age}} = 2.55$)⁴ were randomly assigned in a 2 (Social identity formation: induction vs. deduction) $\times$ 2 (Opinion deviance: agreement vs. opinion deviance) design, in groups of three or four members. We aimed to collect data for 40 groups at minimum. No data were collected after data analysis. Four groups were excluded from the data analysis, because mistakes were made in essential parts of the procedure.⁵ Our final dataset was obtained from 155 participants, distributed over 41 groups (9 groups in the deduction/agreement

condition; 11 groups in the deduction/deviance condition; 11 groups in the induction/agreement condition; 10 groups in the induction/deviance condition). We report all manipulations, measures, and exclusions.

4.2. Procedure and independent variables

We invited participants to the lab and seated them behind individual tables with a laptop indicating a personal number (1–4). The entire study was in Dutch. After reading and signing informed consent, we told participants that we, in collaboration with the Faculty of Law, aimed to gain insight into court decision making. Participants individually judged 11 cases by deciding, on a binary scale, whether a suspect was guilty or not from a moral (not a legal) stance (see Supplementary Materials A). For example, one case described a boy with Down syndrome who sexually intimidated a girl; another a daughter who helped her old and depressed father commit suicide. Twenty cases were pilot-tested and we selected cases with a high likelihood that group members would either agree or disagree.

4.2.1. Social identity formation manipulation

Next, participants were seated on a chair with their personal number. Chairs were arranged in a semicircle, in front of a camera. In the induction condition, personal numbers had unique colors, to highlight participant individuality. In the deduction condition, all numbers were black. Social identity formation was further manipulated with a coordination task in which participants recited an oath for a judge in one of two ways (for similar manipulations, see Koudenbourg et al., 2015; Van Mourik Broekman et al., 2018, 2019). The oath was loosely based on existing oaths for judges in the Netherlands and the U.S.A., excluding any reference to 'I', as this could obscure the social identity formation manipulation. In the *deduction* condition, participants recited the oath in unison. Researchers have shown that acting in unison fosters a shared social identity that focuses on group members' similarities, making group members less focused on individual differences and more aware of uniformity and unity. Acting in unison, therefore, leads to deductive social identity formation. In the *induction* condition, participants recited the oath by taking turns: Each group member read the sentences marked by their personal color. Performing such a complementary action (in an otherwise very similar task) has also been shown to foster a strong shared identity, except that this identity is induced because people's personal value to the group is at the foreground of the social identity formation process.

4.2.2. Opinion deviance manipulation

Next, opinion deviance was manipulated by presenting participant judgements on one of the cases individually judged earlier. For each group, the 11 cases were assessed in a standardized order. In the *agreement* condition, we selected the first case upon which the group agreed on the moral guilt of the suspect, whereas, in the *deviance* condition, we selected the first case upon which one participant disagreed with the other group members. The selected case was displayed on a screen, and the individual judgments were placed in front of the participants, on a paper faced-down. Participants were asked to show their judgements to each other simultaneously, for two reasons: 1) to make the agreement vs. deviance in the group salient, 2) to create an exact moment when opinion deviance (vs. agreement) became evident for all in the group, simultaneously. Next, they discussed their judgements and their underlying reasoning for 1 min. The experimenters left the room to let participants speak freely. Both the recital of the oath and the opinion deviance manipulation were videotaped.

4.2.3. Mouse paradigm

Following the group discussion, we used the mouse paradigm (e.g., Briki et al., 2012) to track participants' levels of belongingness throughout the discussion. Participants sat behind their laptop with a

⁴ We tested whether age and gender differed across condition, by examining the effects of our manipulations on these variables. There were no differences between conditions in terms of age, $ps \leq 0.581$. However, the number of women within the group was significantly lower in the induction condition than in the deduction condition, $\gamma = -0.92$, $t(37) = -2.29$, $p = .028$, $OR = 0.40$; 95% CI [0.18, 0.90]. Neither opinion deviance nor the interaction term yielded significant effects, $ps \leq 0.430$. We report the results without controlling for gender in this paper, and they are almost identical to the results when gender is controlled for.

⁵ Two groups were excluded because they were presented with the wrong moral case. One group was excluded because one member did not speak Dutch sufficiently. Another group was excluded because one group member was believed to have judged the case differently than it was presented on the card.

computer mouse in their dominant hand. First, they read the instructions on a screen, explaining how to use the mouse to indicate their moment-to-moment levels of belongingness. Next, they could practice by moving the mouse along a 640-pixel horizontal axis between three anchors (“not at all, neutral, very much”). After the practice session, participants were asked to place the cursor at the neutral position. The experimenter started the video of the group interaction, which was displayed on the computer screen above the laptop. Mouse measurements started at the same time, and participants' mouse movements were recorded at a frequency of 5 Hz (every 0.20 s).

Afterwards, participants completed a questionnaire, which included manipulation checks and questions, among others,⁶ about group members' belongingness and personal value to the group. All questions could be answered on a scale from 1 (completely disagree) to 7 (completely agree). Finally, participants rated the 11 cases again on moral guilt on a binary scale (see descriptives for opinion change in supplementary materials D).

4.3. Measures

4.3.1. Manipulation checks

4.3.1.1. Social identity formation manipulation check. We checked whether, in both conditions, a sense of social identity was formed by assessing group identification using the seven items from the solidarity and satisfaction components of identification by Leach et al. (2008), and the item: “I identify with this group” (as recommended by Postmes, Haslam, & Jans, 2013; $\alpha = .923$).

4.3.1.2. Opinion deviance manipulation checks. To check the opinion deviance manipulation, we asked participants to what extent they agreed with the statement: “The judgements within this group were similar to each other”. We also assessed to what extent the judgment of each group member (1–4) was perceived to be deviant from the other judgments. This allowed us to test whether the deviant's judgment was indeed perceived to be the deviant one, without explicitly referring to this group member as deviant. Therefore, we used the ratings about themselves (own deviance), and the perceived relative deviance of the deviant (perceived deviance of the deviant – the average perceived deviance of normative group members). This difference score could range from –6 indicating the deviant's judgment was perceived to be far less deviant than the other judgments to 6 indicating the deviant's judgment was perceived to be far more deviant than the other judgments.

4.3.2. Belongingness

We measured participants' sense of belongingness in two ways.

4.3.2.1. Belongingness of each group member. We measured to what extent participants felt each group member (1–4) belonged to the group. We used the rating about themselves (own belongingness) and calculated difference scores for the perceived belongingness of the deviant compared to the average belongingness of normative group members (relative belongingness of the deviant).

4.3.2.2. Belongingness over time. With the mouse paradigm, time series were generated indicating the dynamic trajectory of each participant's feelings of belonging during the group discussion. Mouse movements along the axis were transcribed to a number ranging from 0 (“not at all”) to 640 (“very much”). We assessed the mouse data from the moment opinion deviance (vs. agreement) was presented until the end of the 1-min interaction. Based on the criterion that at least three group

members should successfully complete the mouse paradigm, we excluded two groups, one in each deviance condition. In these groups, no mouse data was recorded for one of the three group members, or one of the group members did not move the computer mouse during the discussion.

4.3.3. Personal value to the group

We also measured the personal value to the group of each group member in two ways.

4.3.3.1. Personal value to the group scale. First, a 3-item scale measured participants' feelings of personal value to the group; e.g., “I feel like I am indispensable to this group” ($\alpha = .770$; Koudenburg et al., 2015).

4.3.3.2. Personal value of each group member. Second, we asked participants to what extent each group member (1–4) was dispensable to the group. We recoded these measures such that higher scores would reflect higher personal value. We again used the ratings about themselves (own personal value) and the difference score for the personal value of the deviant compared to the average personal value of normative group members (relative personal value of the deviant).

5. Results

We conducted our analyses in two steps. In Step 1, we focused on the deviance conditions, to test our specific hypotheses. We included the group-level predictor of social-identity formation ($-.50 =$ deduction; $.50 =$ induction) and the individual-level predictor of normative position ($-.26 =$ normative group members; $.74 =$ deviants; weighted contrasts) and their cross-level interaction to predict the individual-level outcomes. To account for the interdependence of our nested data, we used Hierarchical Linear Modelling (HLM7.03; Raudenbush & Bryk, 2002; ICCs ranged from .19 to $\leq .01$; for a full overview of ICCs, M 's, SD 's, and n per condition, see Supplementary Materials C). We report Cohen's f^2 as a measure of local effect size,⁷ calculated using Mixed Models in SPSS. A sensitivity power analysis ($1-\beta = 80\%$; $\alpha = .05$; $N = 80$), indicated Cohen's $f = 0.317$ ($f^2 = 0.101$) is the minimal detectable effect size for Step 1.⁸ Additionally, we examined the trajectories of group members' belongingness over time for this step.

In Step 2, we explored normative group members' reactions to opinion deviance using the questionnaire and mouse data. We examined group-level effects of social identity formation ($-.50 =$ deduction; $.50 =$ induction), opinion deviance ($-.50 =$ agreement; $.50 =$ disagreement) and their interaction on the individual-level outcomes, using multi-level analyses (ICCs ranged from .12 to $\leq .01$). Final estimates are reported with robust standard errors. A sensitivity power analysis ($1-\beta = 80\%$; $\alpha = .05$; $N = 134$) indicated Cohen's $f = 0.244$ ($f^2 = 0.059$) is the minimal detectable effect size for Step 2.

5.1. Manipulation checks

We first checked whether a social identity was formed in both conditions of social identity formation and whether the opinion deviance manipulation worked as predicted.

5.1.1. Social identity formation manipulation checks

In the overall dataset, we checked whether group members in both conditions formed a social identity. Overall identification levels lay

⁶ Next to the measures described in the paper, we measured some additional, mostly more explorative, measures. An overview of all other measures is reported in Supplementary Materials B.

⁷ Cohen's f^2 is a recommended measure of local effect size in hierarchical linear modelling (Selya, Rose, Dierker, Hedeker, & Mermelstein, 2012).

⁸ As ICCs for the key outcome measures were close to zero in both steps, we conducted sensitivity power analyses as if the data were single level, and conducted an ANOVA.

above the midpoint of the scale ($M = 4.25$, $SD = 0.94$; 95% CI [4.10, 4.40], $ICC < .01$), and there was no difference in identification between the deduction and induction condition, $\gamma = 0.06$, $t(39) = 0.40$, $p < .694$, $R^2 < .01$. In both conditions a social identity was thus successfully formed.

5.1.2. Opinion deviance manipulation checks

Next, we checked whether the opinion deviance manipulation worked as predicted in the overall dataset. Opinion deviance strongly affected the perceived agreement within the group, as intended, $\gamma = -1.40$, $t(39) = -7.76$, $p < .001$, $R^2 < .36$ ($ICC = .46$). Group members rated the item: "The judgements within this group were similar to each other" higher ($M = 6.41$, $SD = 0.93$) in the agreement condition than in the deviance condition ($M = 5.03$, $SD = 0.94$).

We then checked within the deviance conditions, whether the deviant's judgment was perceived to be the deviant one. As expected, deviants rated their own judgment as more deviant ($M = 6.19$, $SD = 1.08$), than normative group members rated their own judgment ($M = 2.02$, $SD = 1.09$), $\gamma = 4.18$, $t(55) = 15.22$, $p < .001$, $R^2 = .75$ ($ICC < .01$). Furthermore, both deviants ($M = 4.67$, $SD = 1.46$; 95% CI [3.84, 5.49]) and normative group members ($M = 3.45$, $SD = 2.06$; 95% CI [2.89, 3.99]) perceived the judgment of the deviant as more deviant than the other judgments (both 95% confidence intervals lay below zero). Thus, although the relative deviance of the deviant was perceived more by the deviant than by normative group members, $\gamma = 1.23$, $t(57) = 2.65$, $p < .001$, $R^2 = 0.06$ ($ICC = .08$), all group members identified the judgment of the deviant as the deviant one. The opinion-deviance manipulation thus worked as predicted.

5.2. Step 1: Reactions to opinion deviance of the deviant compared to the rest of the group

In Step 1, we focused on the deviance conditions, and compared the responses of deviants and normative group members in deductively formed groups with their responses in inductively formed groups.

5.2.1. Belongingness

First, we tested whether the deviant belonged less to the group than normative group members in deductively formed groups, but not in inductively formed groups (H1). Further, we explored whether the relative belongingness of the deviant was perceived to be lower by the deviant than by normative group members, as the deviant may respond more strongly to opinion deviance than normative group members (Levine & Kerr, 2007).

5.2.1.1. Own belongingness. Deviants experienced lower belongingness ($M = 4.43$, $SD = 1.40$) than normative group members ($M = 5.60$, $SD = 0.97$), $\gamma = -1.18$, $t(19) = -3.12$, $p = .006$, $f^2 = 0.233$, a medium effect (Cohen, 1988). Neither social identity formation nor the interaction term affected own belongingness, $ps \geq .226$, $f^2s \leq 0.017$. Hence, in contrast to our hypothesis, when social identity was induced, deviants also felt they belonged less to the group than normative group members did.

5.2.1.2. Relative belongingness of the deviant. We also found no support for our first hypothesis on relative belongingness of the deviant. Deviants perceived the relative belongingness of the deviant to be marginally lower ($M = -0.76$, $SD = 1.50$; 95% CI [-1.23, -0.33]), than normative group members perceived the relative belongingness of the deviant ($M = -0.08$, $SD = 0.86$; 95% CI [-0.35, 0.19]), $\gamma = -0.70$, $t(19) = -1.92$, $p = .071$, $f^2 = 0.089$. Yet, neither social identity formation nor the interaction term significantly affected the relative belongingness of the deviant, $ps \geq .332$, $f^2s \leq 0.024$. Thus, deviants, more so than normative group members, perceived the deviant to belong less than normative group members to the group (as indicated by a 95% confidence interval below zero), and this

Fig. 1. Within the deviance conditions: Belongingness trajectories during the discussion for the deviants and the normative group members, in both the deduction and induction conditions. The grey dashed lines correspond to the best-fit third-order polynomial functions (deduction/normative group members, $belongingness = 6E-06 \text{ time}^3 - 0.004 \text{ time}^2 + 0.75 \text{ time} + 395.89$, $R^2 = .85$; deduction/deviant, $belongingness = -2E-05 \text{ time}^3 + 0.012 \text{ time}^2 - 2.14 \text{ time} + 433.49$, $R^2 = .83$; induction/normative group members, $belongingness = 6E-06 \text{ time}^3 - 0.004 \text{ time}^2 + 0.81 \text{ time} + 389.04$, $R^2 = .94$; induction/deviant, $belongingness = -3E-05 \text{ time}^3 + 0.020 \text{ time}^2 - 3.44 \text{ time} + 446.06$, $R^2 = .92$).

relative belongingness of the deviant was equally low in inductively formed groups as in deductively formed groups.

5.2.1.3. Belongingness over time. We examined the experience of belongingness in more detail, by examining the trajectories over time. Fig. 1 displays the trajectories of belongingness during the discussion within the deviance conditions. Overall, a third-order polynomial equation provided a good fit of the time-series data.⁹

To test whether average levels of belongingness differed between conditions, we used Monte Carlo permutation as a statistical test,¹⁰ and calculated Cohen's d as a measure of effect size. Average levels of belongingness were significantly lower for deviants ($M = 320.86$, $SD = 128.25$) than for normative group members ($M = 443.26$, $SD = 47.71$), in the deduction condition ($p = .009$, $d = 1.27$), and in the induction condition ($p = .004$, $d = 1.43$; $M = 306.55$, $SD = 111.77$; $M = 427.22$, $SD = 41.46$; respectively). No significant differences were found between the other pairwise comparisons ($ps \geq .229$), suggesting that being deviant also hampers belongingness in inductively formed groups, and corresponds with the pattern of results on belongingness for the questionnaire data, reported above.

Interestingly, overall trends in the polynomial functions were positive for normative group members, and negative for deviants. During the discussion, deviants' feelings of belonging decreased over time, while normative group members' belongingness, if anything, increased. The *nonlinear* trajectory was particularly apparent for deviants in the induction condition; they displayed a steep decrease in belongingness at the start of the discussion, which started to recover after the first quarter of the discussion. Such a recovery could not be observed for

⁹ In this equation, the first-order trend accounts for the linear function (without a change in the slope), whereas the second-order trend accounts for the quadratic function (one change in the slope), and the third-order trends accounts for the cubic function (two changes in the slope).

¹⁰ The Monte Carlo test determines the probability that the observed result is caused by chance alone, by simulating that chance based on a repeated shuffling of the collected data (i.e., 10,000 times across the groups that are compared), and a calculation of the probability that the same, or more extreme, result can be found by chance. This technique has high statistical power when working with relatively small samples, unbalanced datasets, and/or time series data (e.g., Todman & Dugard, 2001; Van Geert, Steenbeek, & Kunnen, 2012).

deviants in the deduction condition. Although, in the deduction condition, the change in belongingness also did not conform to a constant linear decrease, there was no period in which belongingness increased following the decrease at the start of the discussion.

Given observable differences in the trends for deviants in the induction and deduction condition, we sought to determine whether deviants in the induction condition demonstrated a weaker negative trend *in combination with* a more positive recovery than those in the deduction condition. We first fitted a linear trend line for the deviants in the two conditions, and determined the beta weights (β_1 (induction) = $-.18$; β_1 (deduction) = $-.43$). Then, we added a quadratic trend and determined the quadratic beta weights (β_2 (induction) = $.005$ and β_2 (deduction) = $.002$). The Monte Carlo permutation showed that deviants in the induction condition indeed produced a weaker negative linear trend *combined with* a stronger positive quadratic trend, than deviants in the deduction condition ($p = .015$). Thus, while deviants' feelings of belonging sharply decrease when they discover that their opinion differs from the rest of the group (and this is more profound in the induction condition), belongingness begins to recover in inductively formed groups, but not in deductively formed groups.

Another interesting pattern occurs for normative group members. Their feelings of belonging increased after opinion deviance in deductively formed groups, but not in inductively formed groups. When comparing normative group members' belongingness trajectories in deductively and inductively formed groups, the average trend (linear slope) is only marginally more positive when identity is deduced ($\beta_1 = .16$) than when identity is induced ($\beta_1 = .08$), $p = .077$. This suggests that the experience of belongingness of normative group members and deviants may diverge over time in deductively formed groups, whereas they converge in inductively formed groups.

In sum, in contrast to our first hypothesis, being deviant also hampers belongingness in inductively formed groups. However, interesting trends can be observed in levels of belongingness over time: The trajectories suggest that deviants may be able to recover from their dip in belongingness after discovering they are the deviant one in an inductively formed group, but they may not in a deductively formed group.

5.2.2. Personal value to the group

We expected the deviant to be more valuable to the group than normative group members in inductively formed groups, but not in deductively formed groups (H2).

5.2.2.1. Own personal value. There were no effects of the manipulations on the single-item assessment of own personal value, $ps \geq .303$, $f^2s \leq 0.021$. However, on the personal value to the group scale, the interaction between social identity formation and normative position was marginally significant in the expected direction, $\gamma = 0.96$, $t(19) = 1.78$, $p = .092$, $f^2 = 0.047$ (indicating a small effect). There were no main effects, $ps \geq .427$, $f^2s \leq 0.004$. Specifically, deviants in the induction condition rated their personal value somewhat higher ($M = 3.70$, $SD = 0.94$), than they did in the deduction condition ($M = 2.82$, $SD = 0.94$), and, somewhat higher than normative group members perceived their own personal value in the induction ($M = 3.08$, $SD = 1.02$) and deduction conditions ($M = 3.15$, $SD = 0.98$).

5.2.2.2. Relative personal value of deviant. Importantly, there was a significant main effect of social identity formation on the relative personal value of the deviant, 0.68 , $t(19) = 2.11$, $p = .049$, $f^2 = 0.081$, a small effect (Cohen, 1988). While participants in the deduction condition reported little difference in the personal values of the deviant and normative group members ($M = 0.02$, $SD = 0.98$; 95%CI $[-0.45, 0.51]$), in the induction condition, the deviant was seen as more valuable than the rest of the group ($M = 0.71$, $SD = 1.40$; 95%CI $[0.21, 1.19]$). We found no effects of normative position or the

Fig. 2. Among normative group members: Belongingness trajectories during the interaction for the groups in the four experimental conditions. The grey dashed lines correspond to the best-fit third-order polynomial functions (deduction/agreement, $belongingness = 434.97 + 8E-06 \text{ time}^3 - 0.005 \text{ time}^2 + 0.96 \text{ time}$, $R^2 = 0.84$; induction/agreement, $belongingness = 371.16 + 2E-05 \text{ time}^3 - 0.01 \text{ time}^2 + 1.7059 \text{ time}$, $R^2 = 0.94$; deduction/deviance, $belongingness = 395.89 + 6E-06 \text{ time}^3 - 0.0035 \text{ time}^2 + 0.7501 \text{ time}$, $R^2 = 0.85$; in the induction/deviance, $belongingness = 389.04 + 6E-06 \text{ time}^3 - 0.0039 \text{ time}^2 + 0.8139 \text{ time}$, $R^2 = 0.94$).

interaction term ($ps \geq .983$, $f^2s \leq 0.001$). Thus, in line with our hypothesis, group members perceived the deviant to be more valuable to the group than normative group members when social identity was induced but not when social identity was deduced. These findings provide some support for our second hypothesis.

5.3. Step 2: Reactions to opinion deviance among normative group members

In Step 2, we focused on normative group members, to explore whether their belongingness and personal value were affected by opinion deviance (vs. agreement), and whether this depended on social identity formation. We did not find an effect of the manipulations on the questionnaire data ($ps \geq .222$, $f^2s \leq 0.003$), yet the trajectories over time displayed some interesting trends which we will briefly describe.

In all conditions, belongingness increased at the start of the discussion, and then remained stable (see Fig. 2). The increase at the start of the discussion was particularly apparent for groups in which there was agreement. On average, levels of belongingness were significantly higher in the agreement than in the deviance conditions ($p = .020$, $d = 0.71$), a medium-to-large effect (Cohen, 1988). Further, average belongingness was marginally lower in the induction than in the deduction condition ($p = .086$, $d = 0.46$, a medium effect). Although in the deduction condition, average levels of belongingness were significantly lower when there was deviance ($M = 443.26$, $SD = 47.71$) instead of agreement ($M = 483.25$, $SD = 37.83$), $p = .029$, $d = 0.93$, this difference was not significant in the induction condition, $p = .135$, $d = 0.54$ ($M = 427.22$, $SD = 41.46$; $M = 454.26$, $SD = 58.30$, respectively). In contrast to the questionnaire data, opinion deviance also appears to affect normative group members' belongingness in the deduction condition, but not in the induction condition. In other words, agreement seems to increase their experience of belongingness when social identity is deduced, but not when it is induced.

6. Discussion

In this paper, we examined the influence of social identity formation processes on responses to opinion deviance. We hypothesized that, because inductive social identity is not derived from similarities but from distinct contributions of individual group members, opinion

deviance may pose less of a threat to the group's identity. Instead, opinion deviance may be tolerated and regarded as valuable. Contrary to our first hypothesis, we found that deviants also belonged less to the group than normative group members in inductively formed groups. The trajectories over time, however, show that deviants start to restore their feelings of belongingness quite rapidly in inductively formed groups, but not in deductively formed groups. Furthermore, we found some support for our second hypothesis: Only in inductively formed groups were deviants perceived to be more valuable to the group than normative group members.

6.1. A more positive view on deviance

Our results suggest that deviance can have value for groups (Coser, 1962; Dentler & Erikson, 1959; Jetten & Hornsey, 2011, 2014). Deviating group members can be valuable to the group, for example, because they enhance the innovativeness of the group (De Dreu & West, 2001; Nemeth, 2012), and other group members are able to recognize this (cf. Ellemers & Jetten, 2013). Furthermore, our results corroborate and extend previous findings that group qualities can influence reactions to deviance (Jetten & Hornsey, 2014; Levine & Kerr, 2007). Previous research has shown that explicit group norms or values can make a deviating opinion within the group more acceptable (Hutchison et al., 2011). We, instead, suggest that the process through which social identity is formed can moderate how group members react to opinion deviance, irrespective of pre-existing norms or values that prescribe how group members *should* act.

Previous research on deductive and inductive processes of social identity formation has focused on the establishment of shared identity through different pathways, but has suggested that once social identities are formed, they could be fundamentally similar in most respects (e.g. Postmes, Spears, et al., 2005; but see Koudenburg et al., 2015). Our findings are consistent with those of previous studies showing that unique and diverse perspectives strengthen inductive social identity formation (Jans et al., 2012; Postmes, Spears, et al., 2005), and extend these findings by showing that inductively formed groups *remain* more appreciative of heterogeneity, compared with deductively formed groups.

We believe groups that have formed a shared identity inductively, from individual contributions, interpret group norms as organically emergent and therefore less prescriptive and fixed (cf. Gelfand et al., 2011; Peltó, 1968). Thus, even though group normative stances may emerge over time, the group remains ready to accommodate the formed norms when deviations challenge established norms: Inductively formed groups are more flexible and accommodating. Hence, the group's position is not defined exclusively by what the majority believes, but is pluralistic and can accommodate minority viewpoints. In theory, minorities may be more influential in changing group norms in inductively formed groups. In our study, too few group members changed their opinion to draw any inferences about such change at this point (see descriptives in Supplementary materials D). Future research could explore how such organically emergent, and thus more flexible norms, affect the influence that deviants can have on their group.

6.2. Negative reactions to opinion deviance

In general, our findings confirm that reactions to opinion deviance are negative, as deviants are likely to face rejection and be excluded from the group (Festinger, 1950; Levine & Kerr, 2007; Schachter, 1951). Across conditions, deviants experienced decreased inclusion: They rated their own belongingness as lower than that of normative group members. This was nicely reflected in the mouse tracking data, where a dip in belongingness was visible at the time the deviance was made public, including in groups which, in theory, should be more open to differences.

Our findings support the idea that the deviant reacts more strongly

to opinion deviance than the rest of the group does (Levine & Kerr, 2007). Deviants perceived the relative deviance of the deviant more strongly than normative group members did. Deviants also perceived the relative belongingness of the deviant as marginally lower than that of normative group members. Most research on reactions to opinion deviance has either focused on the reactions of the group or the deviant. By examining the reactions of both, we showed that the deviating position is more pronounced to the deviant themselves than to normative group members; corroborating findings on the differential experiences of minority versus majority members in groups (cf. Lücken & Simon, 2005).

Interestingly, the moment-to-moment feelings of belonging to the group, as tracked by the mouse paradigm also suggest that opinion deviance affects normative group members differently depending on how social identity is formed. Specifically, normative group members experienced higher levels of belongingness when there was agreement in deductively formed groups, but not in inductively formed groups. Furthermore, when there was opinion deviance, normative group members increased their feelings of belonging marginally more when social identity was deduced, compared to when social identity was induced. This may reflect that normative group members felt able to deal effectively with the threat posed by the deviant (cf. Pinto, Marques, & Paez, 2016), as research suggests they may otherwise opt to actively distance themselves from the group (cf. Eidelman & Biernat, 2003). These findings again suggest that the social identities formed deductively may be somewhat different from the social identities formed inductively; homogeneity of group members strengthens deductive social identity formation (Jans et al., 2012; Postmes, Spears, et al., 2005), and, as a consequence, deductively formed groups may *remain* more appreciative of similarity, than inductively formed groups. These patterns of results only became visible when we examined trajectories of belongingness in detail over time; the questionnaire data did not reveal this differential experience of belongingness in inductively and deductively formed groups.

Similarly, while the questionnaire measure of belongingness suggests an equally negative experience of being deviant, irrespective of social identity formation, the mouse-tracking results suggest that, over time, the deviant may feel less excluded in inductively formed than in deductively formed groups. Specifically, when group identity was induced, deviants began to recover their belongingness after an initial (lower) dip; a tendency that was not observed when group identity was deduced. It seems that, in inductively formed groups, communicating about the issue restores belongingness, possibly because the deviant is more listened to (which is corroborated by the findings on personal value). By taking a more dynamic perspective on the experience of belongingness, we were able to show that deviants *do* react less negatively to their deviance in inductively formed groups, compared to deductively formed groups, although not immediately. These findings show that reactions to deviance are complex, and that studying reactions over time provides additional insights into *when* and *how* opinion deviance has an effect on particular group members. Questionnaires are unable to capture the dynamic experience of belongingness. We therefore believe that, in addition to using questionnaire data, the novel use of the mouse-tracking paradigm allows for a better understanding of reactions to opinion deviance and small group processes more generally.

Our preliminary findings, together with our theoretical rationale that social identities need not be formed solely from categorization processes, raise the question as to what extent deviance always poses a threat to a group's shared identity. We propose that through an inductive pathway to social identity, deviance need not threaten a group's shared identity, as positive distinctiveness from other groups may be less relevant to inductively formed groups, even in an intergroup context. Hence, to be united and to have a positive shared identity, it may not be necessary to brand those with different viewpoints as traitors, marginals, or outgroups. Inductive social identity formation may enable

small groups and large societies alike to be more pluralistic, in terms of tolerance of heterogeneity and of deviants, without the loss of solidarity or social cohesion.

6.3. Limitations

Our study, to our knowledge, is the first to test the hypothesis that reactions to opinion deviance may be less negative in inductively formed groups, than in deductively formed groups. We provide evidence that somewhat supports this proposition, but, inevitably, further research is needed before firm conclusions can be drawn about the strengths of the effects found, and the conditions under which deviance may be reacted to positively rather than negatively.

Our study is limited by a relatively small sample size, and the findings are somewhat mixed for the different measures. With regard to personal value to the group, we find a significant effect of social identity formation on the relative personal value to the group of the deviant, but only a marginal interaction effect of social identity formation and normative position on the personal value to the group scale, and no effects on the single-item regarding one's own personal value. With regard to belongingness to the group, the differential effects of social identity formation on belongingness only became apparent in the levels of belongingness over time, but not in the assessments by questionnaire. These mixed results highlight the complexity of small group dynamics, and group members' reactions to deviance. Hence, future research is needed to unravel this complexity.

Our results suggest that inductive social identity formation cannot fully overcome the reduced belongingness of being deviant. We point out that this may be due to the rather strong manipulation of opinion deviance. We opted to manipulate deviance on a moral domain, to be sure that the standard reaction to such deviance would be rejection, which was indeed what we found (cf. Monin et al., 2008). It is possible that differential reactions to deviance in inductively and deductively formed groups would have been more evident if we had used a less extreme manipulation of deviance.

In contrast, we used quite a subtle social identity formation manipulation. Participants briefly said an oath for a judge either in unison or by taking turns, as a basis for forming a social identity deductively or inductively (Koudenburg et al., 2015). The unique individual contributions that group members could make in the induction manipulation were therefore quite minimal and short-lived, which may have limited the psychological impact of the manipulation. Furthermore, although we showed that both conditions produced equally high identification levels, we did not properly check whether, in the deduction condition, social identity was indeed deduced from in-group commonalities, whereas in the induction condition it was induced from idiosyncratic individual contributions of group members. Our social identity formation manipulation was similar to manipulations used in previous research, which showed that different ways of coordinating interaction promote different routes to social identity formation (e.g., Koudenburg et al., 2015). Yet, in the present study we cannot rule out that we may have manipulated group characteristics associated with inductive and deductive social identity formation, but not the process of inductive and deductive social identity formation itself.

Finally, dealing with deviance in a dynamic group setting takes time, as also suggested by our mouse tracking data. In our study, the time for discussion was very limited (1 min). Future research could track feelings of belonging over a longer period to examine whether, in inductively formed groups, feelings of belonging restore completely, and whether deviance can even positively affect belongingness after the initial shock of opinion deviance has been overcome.

7. Conclusion

Our research provides, both theoretically and methodologically, novel and fruitful avenues for examining reactions to deviance in small

groups. Methodologically, we point to the insights gained by tracking the momentary changes in feelings of belonging after a deviant opinion has been revealed. Such tracking led us to nuance our conclusions from an initial overall negativity in response to deviance, to a more refined conclusion in which responses to deviance can be restored during the groups' further discussion of the issue, depending on the process of identity formation that lays at the base of this group. Our results provide initial evidence that theorizing on individuality and deviance in groups can gain much by not focusing exclusively on groups as if they function as social categories that demand faithful adherence to established normative codes and which sanction deviance. Rather, when small and large groups form on the basis of the unique contributions of individual group members, and when social identities are formed that are tolerant of pluralism and diversity, the stage is set for moral deviants to become tolerated or even celebrated as innovators who may inspire their group to explore new ways of thinking about right and wrong.

Appendix A. Supplementary materials

Supplementary materials to this article can be found online at <https://doi.org/10.1016/j.jesp.2019.04.001>.

References

- Abrams, D., Hogg, M. A., & Marques, J. M. (2005). A social psychological framework for understanding social inclusion and exclusion. In D. Abrams, M. A. Hogg, & J. M. Marques (Eds.), *The social psychology of inclusion and exclusion* (pp. 1–23). New York: Psychology Press.
- Arrow, H., McGrath, J. E., & Berdahl, J. L. (2000). *Small groups as complex systems: Formation, coordination, development, and adaptation*. Sage Publications.
- Bolderdijk, J. W., Brouwer, C., & Cornelissen, G. (2018). When do morally motivated innovators elicit inspiration instead of irritation? *Frontiers in Psychology*, 8(2362), <https://doi.org/10.3389/fpsyg.2017.02362>.
- Bouas, K. S., & Arrow, H. (1995). The development of group identity in computer and face-to-face groups with membership change. *Computer Supported Cooperative Work (CSCW)*, 4(2–3), 153–178. <https://doi.org/10.1007/BF00749745>.
- Briki, W., Den Hartigh, R. J., Bakker, C. F., & Gernigon, C. (2012). The dynamics of psychological momentum: A quantitative study in natural sport situations. *International Journal of Performance Analysis in Sport*, 12(3), 573–592. <https://doi.org/10.1080/24748668.2012.11868620>.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (Second ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Coser, L. A. (1962). Some functions of deviant behavior and normative flexibility. *American Journal of Sociology*, 68(2), 172–181. <https://doi.org/10.1086/223307>.
- De Dreu, C. W. (2002). Team innovation and team effectiveness: The importance of minority dissent and reflexivity. *European Journal of Work and Organizational Psychology*, 11(3), 285–298. <https://doi.org/10.1080/13594320244000175>.
- De Dreu, C. W., & West, M. A. (2001). Minority dissent and team innovation: The importance of participation in decision making. *Journal of Applied Psychology*, 86(6), 1191–1201. <https://doi.org/10.1037/0021-9010.86.6.1191>.
- Dentler, R. A., & Erikson, K. T. (1959). The functions of deviance in groups. *Social Problems*, 7(2), 98–107. <https://doi.org/10.2307/799160>.
- Durkheim, É. (1984). *The division of labor in society*. New York: Free Press.
- Eidelman, S., & Biernat, M. (2003). Derogating black sheep: Individual or group protection? *Journal of Experimental Social Psychology*, 39(6), 602–609. [https://doi.org/10.1016/S0022-1031\(03\)00042-8](https://doi.org/10.1016/S0022-1031(03)00042-8).
- Ellemers, N., & Jetten, J. (2013). The many ways to be marginal in a group. *Personality and Social Psychology Review*, 17(1), 3–21. <https://doi.org/10.1177/1088868312453086>.
- Festinger, L. (1950). Informal social communication. *Psychological Review*, 57(5), 271. <https://doi.org/10.1037/h0056932>.
- Gaertner, L., Iuzzini, J., Witt, M. G., & Oriña, M. M. (2006). Us without them: Evidence for an intragroup origin of positive in-group regard. *Journal of Personality and Social Psychology*, 90(3), 426. <https://doi.org/10.1037/0022-3514.90.3.426>.
- Gelfand, M., Raver, J. L., Nishii, L., Leslie, L. T., Lun, J., Lim, B., & Yamaguchi, S. (2011). Differences between tight and loose cultures: A 33-nation study. *Science*, 332(6033), 1100–1104. <https://doi.org/10.1126/science.1197754>.
- Gernigon, C., d'Arripe-Longueville, F., Delignières, D., & Ninot, G. (2004). A dynamical systems perspective on goal involvement states in sport. *Journal of Sport and Exercise Psychology*, 26(4), 572–596. <https://doi.org/10.1123/jsep.26.4.572>.
- Gorman, J. C., Dunbar, T. A., Grimm, D., & Gipson, C. L. (2017). Understanding and modeling teams as dynamical systems. *Frontiers in Psychology*, 8, 1053. <https://doi.org/10.3389/fpsyg.2017.01053>.
- Hornsey, M. J. (2005). Why being right is not enough: Predicting defensiveness in the face of group criticism. *European Review of Social Psychology*, 16, 301–334. <https://doi.org/10.1080/10463280500436040>.
- Hornsey, M. J. (2006). Ingroup critics and their influence on groups. In T. Postmes, & J.

- Jetten (Eds.). *Individuality and the group: Advances in social identity* (pp. 74–91). Thousand Oaks, CA US: Sage Publications, Inc.
- Hutchinson, P., Jetten, J., & Gutierrez, R. (2011). Deviant but desirable: Group variability and evaluation of atypical group members. *Journal of Experimental Social Psychology*, 47(6), 1155–1161. <https://doi.org/10.1016/j.jesp.2011.06.011>.
- Jans, L., Leach, C. W., Garcia, R. L., & Postmes, T. (2015). The development of group influence on in-group identification: A multilevel approach. *Group Processes & Intergroup Relations*, 18(2), 190–209. <https://doi.org/10.1177/1368430214540757>.
- Jans, L., Postmes, T., & Van der Zee, K. I. (2011). The induction of shared identity: The positive role of individual distinctiveness for groups. *Personality and Social Psychology Bulletin*, 37, 1130–1141. <https://doi.org/10.1177/0146167211407342>.
- Jans, L., Postmes, T., & Van der Zee, K. I. (2012). Sharing differences: The inductive route to social identity formation. *Journal of Experimental Social Psychology*, 48(5), 1145–1149. <https://doi.org/10.1016/j.jesp.2012.04.013>.
- Jetten, J., & Hornsey, M. J. (Eds.). (2011). *Rebels in groups: Dissent, deviance, difference, and defiance*. UK: Wiley-Blackwell.
- Jetten, J., & Hornsey, M. J. (2014). Deviance and dissent in groups. *Annual Review of Psychology*, 65, 461–485. <https://doi.org/10.1146/annurev-psych-010213-115151>.
- Koudenburg, N., Postmes, T., Gordijn, E. H., & van Mourik Broekman, A. (2015). Uniform and complementary social interaction: Distinct pathways to solidarity. *PLoS One*, 10(6), <https://doi.org/10.1371/journal.pone.0129061>.
- Leach, C. W., Van Zomeren, M., Zebel, S., Vliek, M. L. W., Pennekamp, S. F., Doosje, B., & Spears, R. (2008). Group-level self-definition and self-investment: A hierarchical (multi-component) model of in-group identification. *Journal of Personality and Social Psychology*, 95(1), 144–165. <https://doi.org/10.1037/0022-3514.95.1.144>.
- Levine, J. M. (1989). Reactions to opinion deviance in small groups. In P. Paulus (Ed.). *Psychology of group influence* (pp. 187–231). (2nd ed.). Hillsdale, NJ: Erlbaum.
- Levine, J. M., & Kerr, N. L. (2007). Inclusion and exclusion: Implications for group processes. In A. W. Kruglanski, & E. T. Higgins (Eds.). *Social psychology: Handbook of basic principles* (pp. 759–784). New York, NY, US: The Guilford Press.
- Levine, J. M., & Marques, J. M. (2016). Norm violators as threats and opportunities: The many faces of deviance in groups. *Group Processes & Intergroup Relations*, 19(5), 545–552. <https://doi.org/10.1177/1368430216657415>.
- Lücken, M., & Simon, B. (2005). Cognitive and affective experiences of minority and majority members: The role of group size, status, and power. *Journal of Experimental Social Psychology*, 41(4), 396–413. <https://doi.org/10.1016/j.jesp.2004.08.006>.
- Marques, J. M., Abrams, D., Paez, D., & Hogg, M. A. (2001). Social categorization, social identification, and rejection of deviant group members. In M. A. Hogg, & S. Tindale (Eds.). *Blackwell handbook of social psychology: Group processes*. Blackwell Handbooks.
- Marques, J. M., & Paez, D. (1994). The 'black sheep effect': Social categorization, rejection of ingroup deviates, and perception of group variability. *European Review of Social Psychology*, 5(1), 37–68. <https://doi.org/10.1080/14792779543000011>.
- Marques, J. M., Yzerbyt, V. Y., & Leyens, J. (1988). The 'Black Sheep Effect': Extremity of judgments towards ingroup members as a function of group identification. *European Journal of Social Psychology*, 18(1), 1–16. <https://doi.org/10.1002/ejsp.2420180102>.
- McGrath, J. E., Arrow, H., & Berdahl, J. L. (2000). The study of groups: Past, present, and future. *Personality and Social Psychology Review*, 4(1), 95–105. https://doi.org/10.1207/S15327957PSPR0401_8.
- Minson, J. A., & Monin, B. (2012). Do-gooder derogation: Disparaging morally motivated minorities to defuse anticipated reproach. *Social Psychological and Personality Science*, 3(2), 200–207. <https://doi.org/10.1177/1948550611415695>.
- Monin, B., Sawyer, P. J., & Marquez, M. J. (2008). The rejection of moral rebels: Resenting those who do the right thing. *Journal of Personality and Social Psychology*, 95(1), 76. <https://doi.org/10.1037/0022-3514.95.1.76>.
- Moscovici, S. (1976). *Social influence and social change*. London, UK: Academic Press.
- Nemeth, C. J. (2012). Minority influence theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Vol. Eds.), *Handbook of theories in social psychology. Vol 2. Handbook of theories in social psychology* (pp. 362–378). New York, NY: Sage.
- Packer, D. J. (2008). On being both with us and against us: A normative conflict model of dissent in social groups. *Personality and Social Psychology Review*, 12(1), 50–72. <https://doi.org/10.1177/1088868307309606>.
- Pelto, P. J. (1968). The difference between "tight" and "loose" societies. *Transaction*, 5, 37–40. <https://doi.org/10.1007/BF03180447>.
- Pinto, I. R., Marques, J. M., & Paez, D. (2016). National identification as a function of perceived social control: A subjective group dynamics analysis. *Group Processes & Intergroup Relations*, 19(2), 236–256. <https://doi.org/10.1177/1368430215577225>.
- Postmes, T., Baray, G., Haslam, S. A., Morton, T. A., & Swaab, R. I. (2006). The dynamics of personal and social identity formation. In T. Postmes, & J. Jetten (Eds.). *Individuality and the group: Advances in social identity* (pp. 215–236). Thousand Oaks, CA: Sage.
- Postmes, T., Haslam, S., & Swaab, R. I. (2005). Social influence in small groups: An interactive model of social identity formation. *European Review of Social Psychology*, 16, 1–42. <https://doi.org/10.1080/10463280440000062>.
- Postmes, T., Haslam, S. A., & Jans, L. (2013). A single-item measure of social identification: Reliability, validity, and utility. *British Journal of Social Psychology*, 52(4), 597–617. <https://doi.org/10.1111/bjso.12006>.
- Postmes, T., Spears, R., Lee, A. T., & Novak, R. J. (2005). Individuality and social influence in groups: Inductive and deductive routes to group identity. *Journal of Personality and Social Psychology*, 89(5), 747–763. <https://doi.org/10.1037/0022-3514.89.5.747>.
- Prentice, D. A., Miller, D. T., & Lightdale, J. R. (1994). Asymmetries in attachments to groups and to their members: Distinguishing between common-identity and common-bond groups. *Personality and Social Psychology Bulletin*, 20(5), 484–493. <https://doi.org/10.1177/0146167294205005>.
- Prislin, R., & Christensen, P. N. (2005). Social change in the aftermath of successful minority influence. *European Review of Social Psychology*, 16(1), 43–73. <https://doi.org/10.1080/104632804400000071>.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods. Vol. 1*. Sage.
- Schachter, S. (1951). Deviation, rejection, and communication. *Journal of Abnormal and Social Psychology*, 46, 190–207. <https://doi.org/10.1037/h0062326>.
- Selya, A. S., Rose, J. S., Dierker, L. C., Hedeker, D., & Mermelstein, R. J. (2012). A practical guide to calculating Cohen's f², a measure of local effect size, from PROC MIXED. *Frontiers in Psychology*, 3, 111. <https://doi.org/10.3389/fpsyg.2012.00111>.
- Swaab, R. I., Postmes, T., & Spears, R. (2008). Identity formation in multiparty negotiations. *British Journal of Social Psychology*, 47(1), 167–187. <https://doi.org/10.1348/014466607X216124>.
- Todman, J. B., & Dugard, P. (2001). *Single-case and small-n experimental designs: A practical guide to randomization tests*. Psychology Press.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Basil Blackwell.
- Vallacher, R. R., Froehlich, A., Nowak, M., & Rockloff, M. (2002). The dynamics of self-evaluation. *Personality and Social Psychology Review*, 6(4), 370–379. https://doi.org/10.1207/S15327957PSPR0604_11.
- Van Geert, P., Steenbeek, H., & Kunnen, S. (2012). Monte Carlo techniques: Statistical simulation for developmental data. *A dynamic systems approach to adolescent development* (pp. 59–68). Psychology Press.
- Van Mourik Broekman, A., Gordijn, E. H., Koudenburg, N., & Postmes, T. (2018). Reshaping social structure through performances: Emergent solidarity between actors and observers. *Journal of Experimental Social Psychology*, 76, 19–32. <https://doi.org/10.1016/j.jesp.2017.12.002>.
- Van Mourik Broekman, A., Koudenburg, N., Gordijn, E. H., Krans, K., & Postmes, T. (2019). The impact of art: Exploring the social-psychological pathways that connect audiences to live performances. *Journal of Personality and Social Psychology*. <https://doi.org/10.1037/pspi0000159>.
- Wesselmann, E. D., Williams, K. D., Pryor, J. B., Eichler, F. A., Gill, D. M., & Hogue, J. D. (2014). Revisiting Schachter's research on rejection, deviance, and communication (1951). *Social Psychology*, 45(3), 164–169. <https://doi.org/10.1027/1864-9335/a000180>.
- Wilder, D., & Simon, A. F. (1998). Categorical and dynamic groups: Implications for social perception and intergroup behaviour. In C. Sedikides, J. Schopler, & C. A. Insko (Eds.). *Intergroup cognition and intergroup behaviour* (pp. 27–44). Mahwah, NJ: Lawrence Erlbaum Associates.