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Showing engagement or not:

The influence of social identification and group deadlines on individual control strategies

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Abstract

People often work together in groups that have to reach goals in a given time frame. Nonetheless, the impact of deadlines on group members' self-control has not been studied so far. Here this topic is addressed by integrating the action-phase model (Heckhausen, 1999), which postulates the use of different self-control strategies during individual-level goal pursuit, with the social identity approach. It was predicted and found in two studies that highly identified group members, in contrast to those who were only weakly identified, responded to a group's deadline phase (pre vs. post) by showing phase-appropriate patterns of engagement and disengagement. Study 1 measured identification and assessed intentions and behavioral indicators of self-control. Study 2 manipulated identification and assessed self-reports of intended self-control strategies. Overall, the findings corroborate the notion that the social self can serve as a basis for self-regulation.

Keywords: identification, control strategies, self-regulation, group deadline, goal disengagement

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Just like individuals, groups and their members are often subject to deadlines (Gevers, Rutte, & van Eerde, 2006; Waller, Conte, Gibson, & Carpenter, 2001) and research has investigated several effects of such time scarcity, for example the development of time awareness norms (Janicik & Bartel, 2003) and shared temporal cognitions (Gevers et al., 2006; Sanna, Parks, Chang, & Carter, 2005; see also Gersick, 1988). This, in turn, has implications for quality and quantity of performance (Labianca, Moon, & Watt, 2005; Karau & Kelly, 1992). A key question that remains unanswered, however, is how group members self-regulate when facing compared to when experiencing the passing of a deadline. This question is highly relevant, not only because of the frequency of group deadlines, but also because deadlines tend to have severe implications for individual self-regulation (Heckhausen, Wrosch, & Schulz, 2010; for details see below). However, it is by no means guaranteed that these self-regulatory effects generalize from individual to group goals, as group goal striving comes with far more complexity than does individual goal striving (e.g., Karau & Williams, 1993; Sassenberg & Woltin, 2008).

As we will outline below, adaptive self-regulation in the passing of deadlines has been studied at the individual level, and has been shown to be beneficial for successful goal attainment and psychological well-being. Investigating this question at the group-level allows for novel insights about whether or not in these contexts the social self is regulated in the same manner as the personal self (Smith, 2002). Furthermore, this would offer a broader, more complete view on the role of social identification, as it entails contexts in which social identification might result in reduced effort, and delineate possible differences in motivational sources (external vs. internal)

between those who are highly versus weakly identified with a group.

This research investigates self-control strategies that group members engage in on behalf of their group both prior to and after reaching a temporal deadline. Moreover, it takes account of social identification, a key antecedent of group goal striving (Ashmore, Deaux, McLaughlin-Volpe, 2004). More precisely, the effect of deadline phase (pre-vs. post-deadline) and social identification with the group (high vs. low) on adaptive strategy usage was tested. Adaptive, phase-congruent strategy usage entails strategies of engagement in the pre-deadline phase and strategies of disengagement in the post-deadline phase. To this end, we draw on research on self-control strategies in individual goal pursuit (Heckhausen, 1999) and on the social identity approach (SIA; Brewer, 1991; Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). We predict that highly identified group members, in comparison to those who are only weakly identified, will be more likely to use engagement and disengagement strategies as called for by their groups' deadline situation. We thus test the novel prediction that, in some circumstances, social identity has the potential to result in *lowered* effort and performance. While such effects of identification on effort have been suggested earlier on theoretical grounds (cf. van Knippenberg, 2000), they have, to our knowledge, not been empirically demonstrated.

Social Identification and Group Goal Engagement

Research conducted within the SIA has repeatedly demonstrated that when individuals categorize themselves as group members, ingroup norms guide action intentions (Simon, Stürmer, & Steffens, 2000; Terry & Hogg, 1996) and behavior (Jetten, Spears, & Manstead, 1997), but that the level of importance of the group to the self moderates this effect. In other words, ingroup norms guide members' intentions and behavior to the extent that the members identify with the group (Ashmore et al., 2004). Indeed, higher levels of group identification have been linked to group productivity (James & Greenberg, 1989; Ouwerkerk, de Gilder, & de Vries

2000; Worchel, Rothgerber, Day, Hart, & Butemeyer, 1998), decreased social loafing (Karau, Markus, & Williams, 2000; for a meta-analysis see Karau & Williams, 1993), stronger commitment (for summaries see Doosje, Ellemers, & Spears, 1999; Ouwerkerk, Ellemers, & de Gilder, 1999), collective action (Kelly, 1993; Stürmer & Simon, 2004; see also Wright, 2001), and enhanced organizational citizenship and extra role behavior (for meta-analyses cf. Cooper-Hakim & Viswesvaran, 2005; Riketta, 2004).

However, the effects of identification do not always play out so straightforwardly. For example, following the SIA the relationship between identification and ingroup bias should be strong, but support for this claim is at best modest (Brown, 2000; for a review see Hinkle and Brown, 1990). Gockel, Kerr, Seok and Harris (2008) found no direct or moderating effects of identification on effort in an intragroup setting, and Lount and Phillips (2007) found group members to increase effort only when outperformed by an outgroup member under conditions of social comparison. Thus, investigating circumstances in which identification might result in either increased or decreased effort should contribute to a better understanding of these seemingly contradictory findings.

We suggest that one such set of circumstances is defined by whether or not a deadline for goal attainment has passed. The passing of a deadline implies radically reduced opportunities for goal attainment. When a deadline has passed, it would not be in the best interest of the group for members to continue goal-striving in vain. Here, identification should aid effort reduction and disengagement from previously endorsed group goals. This stands in contrast to situations in which the deadline has not yet passed, and when high levels of goal striving on behalf of group goals are both functional and desirable.

Deadline-related Control Strategies and their Usage

Pre- and post-deadline control strategies of self-regulation so far have not been

investigated at the group level. Therefore, in what follows we draw on the life-span theory of control (Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996) and the action-phase model (Heckhausen, 1999), which provide a theoretical background for classifying control strategies and their usage around deadlines.

The action-phase model (Heckhausen, 1999) describes five control strategies originally identified in the context of individual goal striving (Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996; for a review see Heckhausen et al., 2010) that adaptively map onto different deadline phases of goal pursuit. Within the model, a deadline represents a point in time when a context marked by high opportunities and low constraints shifts to a context marked by low opportunities and high constraints. Deadlines are not limited to the developmental domain or to time constraints, but are understood as "a general concept [that] might be conceived as a 'transition to a condition of lost opportunities' and […] include situations when, in the process of goal striving, the external or internal prerequisites for goal attainment are lost" (Heckhausen, Wrosch, & Fleeson, 2001, p. 401). In the context of group deadlines it is advisable to bear the latter in mind. For example, for clear-cut temporal workgroup deadlines concerning the attainment of group goals, the passage of a deadline constitutes a transition to a context of lost opportunities. This is the focus of the current work.

The action-phase model proposes that passing a deadline should bring about a shift in self-control strategies, from those that promote urgent goal striving to those that support disengagement, as further goal striving would be dysfunctional (e.g., in terms of resource allocation). More precisely, prior to a deadline three strategies are seen as appropriate and adaptive: (a) selective primary control, (b) compensatory primary control, and (c) selective secondary control. *Selective primary control* (SPC) refers to investing behavioral resources (e.g., time, effort). *Compensatory primary control* (CPC) involves seeking help or assistance, and is

necessary when internal resources prove insufficient. *Selective secondary control* (SSC) refers to meta-cognitively (volitionally) focusing one's motivational commitment and shielding one's goal from alternative stimuli (e.g., enhancement of the goal value; anticipation of positive consequences). All three strategies are presumed to contribute to successful goal striving. However, if the deadline for goal achievement passes without the goal being reached, these three strategies are predicted to be replaced by two others: (d) compensatory secondary control – disengagement, and (e) compensatory secondary control – protection of motivational resources. *Compensatory secondary control – disengagement* (CSC-dis) refers to giving up the original goal and consequently psychologically disengaging from it. *Compensatory secondary control – protection* (CSC-prot) refers to strategies aimed at protecting one's motivational resources, which entails processes of engaging in self-protective attributions and self-serving comparisons. Figure 1 gives an overview on the phase-adequate control strategies before and after passing a deadline, excluding compensatory primary control, which is not addressed here for reasons discussed in detail below.

The action-phase model and its strategies have received empirical support in various domains (Heckhausen et al., 2001; Heckhausen & Tomasik, 2002; Wrosch & Heckhausen, 1999), showing that most individuals appropriately use the strategies in accordance with opportunities for goal attainment. Moreover, for unattainable goals the beneficial value of compensatory secondary control is demonstrated by research linking it to higher levels of well-being and physical health (e.g., Wrosch, Miller, Scheier, Brun de Pontet, 2007; Wrosch, Scheier, Miller, Schulz, & Carver, 2003; Wrosch, Schulz, & Heckhausen, 2002).

Applying the action-phase model to the group level by integrating it with the social identity approach, we expect the deadline phase and social identification to interact in their impact on control strategy usage, as we outline below, where we refer to self-control strategies

on behalf of group goals as group-guided self-control.

The Current Research: Social Identification and Group-guided Control Strategy Usage

Our general hypothesis is that the self-control strategies suggested for individual goal pursuit and individual deadlines also hold at the group level, where the social self is the basis of self-control, given a salient social identity. Thus, both highly and weakly identified group members' expectancy of goal attainment should be affected by a group deadline. However, the value of goal attainment is impacted by social identification. In turn, we expect deadline status (expectancy) and identification (value) to combine to impact strategy choice: The stronger group members' identification, the more important the group and its goal are to the social self, which should encourage more adaptive, group-guided self-control. Thus, we expect highly identified members to respond especially adaptively to their groups' deadline phases. By contrast, weakly identified members should be only mildly or not at all influenced by their group's deadline phase. In short, we expect social identification to moderate the effect of a deadline on group members' self-control strategy use.

Two lines of research corroborate this reasoning. First, a host of experimental studies has shown that introducing an extrinsic reward for performing an intrinsically interesting task tends to undermine individuals' intrinsic motivation, and leads them to persist at the task less when the extrinsic reward is removed (Deci, 1971; Harackiewicz, 1979; Kruglanski, Friedman, & Zeevi, 1971; Lepper, Green, & Nisbett, 1973; for a meta-analytic review see Deci, Koestner, & Ryan, 1999). This undermining effect is most reliable for expected (Lepper et al., 1973), salient (Ross, 1975), and task-engagement contingent rewards (Ryan, Mims, & Koestner, 1983). Extending this idea to the group task context, we expect that to the extent that task engagement and performance are linked to benefits and rewards for the ingroup, obtaining rewards for the ingroup becomes an important extrinsic reason for task-engagement for those who strongly identify with the ingroup.

This, in turn, should tend to undermine whatever intrinsic motivation those highly identified with the group might otherwise have had for performing the task. Consequently, when the extrinsic reason for task engagement is withdrawn—specifically, when the deadline for earning rewards has passed—highly identified members should demonstrate a substantial decrease in engagement and persistence. In contrast, for those who are only weakly identified with the ingroup, obtaining rewards for the ingroup is less important, and so should be less likely to undermine their intrinsic motivation for performing the task. That is, weakly identified members should be more likely to engage in the task simply for the inherent satisfaction of doing so, rather than for its instrumental value (Ryan & Deci, 2000). Consequently, when the deadline for earning ingroup rewards has passed, weakly identified group members should demonstrate less of a drop in engagement and persistence because their reason for engaging in the task should still reside to a significant degree in the task being intrinsically motivating.[1]

Second, our reasoning is also corroborated by research addressing other self-regulation theories at the group level (i.e., regulatory focus; Higgins, 1997; self-discrepancies, Higgins, 1987), were effects tend to be more pronounced the more group members identify with their group (for an overview, see Sassenberg & Woltin, 2008). For example, concerning regulatory focus, Faddegon, Scheepers, and Ellemers (2008) found that an induced collective regulatory focus shifted the behavior of group members on a signal detection task towards either promotion- or prevention-consistent behavior, depending on condition, and that these effects were especially strong for high identifiers. Likewise, Sassenberg, Matschke, and Scholl (2011; see also Petrocelli & Smith, 2005) found that a mismatch between group members' actual self (i.e., their behavior and characteristics) and ingroup norms subsequently led to the motivation (i.e., effort and persistence) to be and behave in line with the group norm only for those who were highly identified with the ingroup. Thus, while self-regulatory mechanisms often found at the individual

level have also been found to operate at the group level in these studies, social identification was a precondition for the group level effects to occur. This strongly suggests that identification may also be an essential precondition for group-guided self-control and a moderator of group deadline phases on group-based self-control strategy use.

We hypothesized that whereas highly identified group members will be impacted by their ingroup's deadline phase and show adaptive self-control strategies in line with their ingroup's deadline phase (i.e., they will employ strategies of engagement before the deadline has passed and strategies of disengagement afterwards), weakly identified group members should demonstrate a pattern of engagement/disengagement that is less strongly impacted by their group's deadline phase. To test this prediction, we used quasi-minimal groups and manipulated the groups' deadline phase. Study 1 measured social identification and focused on a participants' use of selective primary control strategies. Study 2, on the other hand, manipulated identification and assessed not only participants' use of selective primary control, but also three of the other group-guided self-control strategies.

Study 1

Because of the postulated primacy of selective primary control (Heckhausen & Schulz, 1995), we focused on this strategy in Study 1, using both behavioral and behavioral intention measures. Specifically, Study 1 investigated whether higher levels of ingroup identification lead to more behavioral engagement in pre-deadline situations, and more disengagement in post-deadline situations, than is the case for lower levels of identification. In other words, Study 1 explored social identification as a moderator of effects of a group's deadline situation on selective primary control. To this end, we measured social identification, manipulated the group's deadline phase, and assessed goal (dis)engagement. Furthermore, we tried to exclude possible individual outcome considerations (Karau et al., 2000) by employing a remuneration

procedure in which engagement would only benefit future ingroup-member participants, not the participants themselves (Sassenberg, Kessler, & Mummendey, 2003). Based solely on the action-phase model (Heckhausen, 1999), one would predict that participants should display more task engagement – operationalized as greater task persistence and greater willingness to volunteer their time and effort to help future ingroup members – in the pre-deadline compared to the post-deadline situations. However, because we expected social identification to moderate the effect of a group deadline on self-control strategy use, we predicted that this pattern would be stronger for participants highly identified with their ingroup compared to those only weakly identified with their ingroup (Hypothesis 1). Thus, we expected weakly identified participants to be less strongly affected by the group's deadline phase. Overall, this amounts to predicting an interaction between the group's deadline phase and group members' level of social identification.

Method

Design and Participants

A total of 126 undergraduate students participated in this study. They were randomly assigned to one of two deadline phase conditions (pre vs. post), and their social identification was measured. Between three and six participants were run per session, each of which lasted approximately 45 minutes. Participants were run in individual cubicles, and were told that the study was being simultaneously run in other locations on the university's campus. One participant from the post-deadline condition who in the debriefing session was surprised about his remuneration and thus evidently did not understand the remuneration system used (see below) was not considered. The final sample thus comprised 125 participants (89 females; mean age 22 years).

Procedure

During recruitment, participants were told that they would receive approximately 4 € for

participating. Upon arrival in the laboratory they were seated in separate cubicles and informed

that the study was about concentration styles and teamwork, and that they would have several

tasks to work on with other participants sharing the same concentration style (i.e., ingroup

members). Participants were further informed that because the study allegedly also investigated

dynamic remuneration, their pay would depend on the performance of previous participants with

the same concentration style. Likewise, the remuneration of future participants with the same

concentration style would in part depend on their current team's overall performance. This

procedure was implemented in order to avoid personal monetary outcome considerations having

an impact on the results obtained.

Next, participants were assigned to quasi-minimal groups. They completed a

concentration style task ostensibly distinguishing between 'concave' and 'convex' styles. The

procedure was identical to the one applied by Otten and Wentura (1999, Experiment 1; see also

Otten & Wentura, 2001) and followed a typical minimal group paradigm (with novel categories,

anonymous category assignment, and no inter- or intragroup interaction). Allegedly, the task

served to assess performance on attention-demanding activities, with a "concave style" starting

and ending with a good performance and a "convex style" performing better in the middle. To

this end, participants worked for approximately 3 minutes through 100 trials of a letter-matching

task (Neill, Lissner, & Beck, 1990), which ostensibly measured their attention sequence. In each

trial, they had to state whether the second and fourth letter in a sequence of five letters were the

same (e.g., TSDST) or not (e.g., TSDCT). As in Otten and Wentura (1999), it was stated that

overall performance did not differ between groups. All participants were randomly categorized

and social identification with their concentration style group was subsequently measured.

Participants were then told that due to the performance of previous ingroup members, they would

be compensated with 5 € instead of 4 €, and that future participants from their ingroup would

also receive 5 € if as a team they managed to reach a certain criterion (43 points) in the following tasks. Furthermore, they were informed that they had only a limited amount of time to complete the tasks, and that they would later receive feedback on their time budget.

Following a task to provide them with the impression of being connected to other ingroup members via their computer (i.e., they completed sentences ostensibly started by other ingroup members present in the laboratory), participants went on to complete a total of six easy-to-solve four-letter anagrams (which all participants solved). This also served to familiarize participants with the anagram task.

Prior to a second round of anagrams, participants were informed that their group had so far achieved a total of 21 of the 43 points required for future ingroup members to also receive 5 €. Then, in order to manipulate the deadline phase, participants also received feedback on their group's time budget. In the pre-deadline phase condition they were told that their group still had some time left and that reaching 43 points was still possible. In the post-deadline phase condition they were told that their overall time for earning points had been used up, but that they would nonetheless go through the second anagram round.

In the second anagram round, participants were confronted with 15 5- to 8-letter anagrams (13 solvable, 2 unsolvable). The description of the task made it clear that without a solution, the next anagram would appear after 2 minutes but that they could skip an anagram at any time by pressing the 'next' button that appeared at the bottom of the screen.

Finally, participants completed a questionnaire in which they indicated how much time they would be willing to stay after the experiment in order to share their knowledge of the task with future ingroup members, and answered a set of the manipulation-checks. Subsequently, they were debriefed, compensated, and dismissed.

Measures

Social identification. To measure the concept of social identification broadly (Ellemers, Kortekaas, & Ouwerkerk, 1999), its evaluative (group self-esteem; e.g., "I feel good about my group") and cognitive components (self-categorization; e.g., "I identify with other members of my group") were assessed on a scale ranging from 1 (=*not at all*) to 7 (=*very much*); (6 items; M=5.34, SD=0.83; α=.69).

Engagement. Two different operationalizations of engagement (i.e., selective primary control) were assessed. One was a behavioral measure, and consisted of the *time spent on the two unsolvable anagrams* prior to skipping them. Unknown to participants, we included two unsolvable eight-letter anagrams within the 13 solvable anagrams. We computed the average time spent on trying to solve the unsolvable anagrams before skipping to the next anagram (maximum 2 minutes; see above). Anagram tasks are a common and established measure of effort and persistence, and thus engagement (e.g., Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001; Converse & DeShon, 2009; Eisenberger & Masterson, 1983; Giguère & Lalonde, 2009; James & Greenberg, 1989; Shah & Kruglanski, 2002; Sherman, Skov, Hervitz, & Stock, 1981; Thompson & Richardson, 2001).

As a second operationalization of engagement, we assessed participants' *willingness to exert additional effort on behalf of the ingroup* by staying in the lab after the experiment without receiving additional reimbursement in order to provide future ingroup members with advice about the task. This measure thus assesses engagement beyond the experimental session itself. Specifically, participants were told: "In future studies we intent to allow former participants to help future participants from their own concentration style group. Therefore, following this experiment you will have an opportunity to take part in a training session that will teach you anagram solution strategies. You will be allowed to leave some notes from this training session for future members of your concentration style group. How interested are you in doing this?"

(1=*not at all* to 7=*very much*). Thus, this measure too enabled participants to help gain rewards for the ingroup without personally benefitting from their additional effort.[2]

Manipulation check. On a scale ranging from 1 (=*does not apply*) to 7 (=*fully applies*) participants at the very end of the experimental session rated three items assessing the extent to which they thought that the group goal could be attained ("Our group still had enough time in order to achieve/My group had a realistic chance of reaching the required points in the second anagram round," "Gaining 43 points was possible for our group"; these three items were averaged to form a composite measure, α=.81).

<div align="center">*Results*</div>

Manipulation Check

The deadline phase manipulation was successful: Participants in the pre- compared to the post-deadline phase condition were more likely to believe that the group goal could still be achieved (M_{pre}=4.49, SD_{pre}=1.26; M_{post}=2.61, SD_{post}=1.42), $F(1,123)$=60.33, $p<.001$, η_p^2=.33.

Engagement

We expected social identification to moderate the effect of a group deadline on self-control strategy use. Thus, we predicted that the effect of displaying more task engagement (i.e., task persistence and willingness to help future ingroup members) in the pre-deadline compared to the post-deadline situations would be stronger for participants highly identified with their ingroup compared to those only weakly identified with their ingroup. Thus, for both measures we expected according to Hypothesis 1 to find an interaction between social identification and the group's deadline phase. To test these predictions, separate multiple regression analyses were conducted using deadline (pre vs. post, coded 1 vs. -1, respectively), participants' z-standardized identification scores, and the product of identification and deadline as predictors.

The regression analysis for time spent on the unsolvable anagrams revealed a marginal

effect of identification (t=-1.78, p=.078), a non-significant effect of deadline condition (t<1.5, p>.127), and, more importantly, a significant and predicted deadline-by-identification interaction (B=7.88, SE=3.56, t=2.21, p=.029). We decomposed this interaction for high (+1 SD) and low (-1 SD) levels of identification (Aiken & West, 1991), with simple slope analyses revealing the predicted pattern. For participants with a high level of ingroup identification, effort was higher in the pre- compared to the post-deadline phase condition (B=13.22, SE=4.95, t=2.67, p<.01), while for low levels of identification there was no reliable effect (t<1, p>.61; see Fig. 2a).

The regression analysis for participants' willingness to exert additional effort on behalf of the ingroup revealed that the more highly they identified with the ingroup the more they were willing to exert additional effort after the experiment was over (B=0.59, SE=0.15, t=3.91, p<.001). There was no effect of deadline condition (t<1.2, p>.26). More importantly, the hypothesized deadline-by-identification interaction was significant (B=.35, SE=0.15, t=2.29, p=.024). Simple slope analyses revealed the predicted pattern. For participants with a high level of ingroup identification, willingness to exert additional effort on behalf of the group was higher in the pre- compared to the post-deadline phase condition (B=.51, SE=0.21, t=-2.43, p=.016), while for low levels of identification the effect was not reliable (t<1, p>.39; see Fig. 2b).

Discussion

The current results support our hypothesis that social identification moderates the effect of a deadline on group members' self-control strategy use. Highly identified group members showed a clear pattern of engagement in the pre-deadline condition and disengagement in the post-deadline condition, whereas weakly identified members did not show this pattern. This was found for both measures of selective primary control: persistence on unsolvable anagrams, a behavioral measure, and willingness to exert additional effort on behalf of the ingroup, a measure of behavioral intentions that assesses engagement beyond the experimental session itself.

Of note, these results were obtained despite participants being aware that they could easily and without negative personal consequences skip anagrams and/or leave immediately after the experimental session was over (knowing that their personal remuneration was not conditional on their effort or lack thereof).

Encouraging as the results of Study 1 are, however, two limitations should be noted. First, identification was measured, not manipulated, which raises a question about causality. Second, Study 1 focused exclusively on selective primary control, which is just one of the five strategies differentiated by the action phase model. Consequently, Study 2 was designed to address the question of causality by manipulating identification with the ingroup, and it assessed a wider range of control strategies derived from the action phase model.

Study 2

The procedures used in Study 2 for the most part followed those employed in Study 1. However, in order to assess a wider range of control strategies identified in the action phase model as important for individual self-regulation in either pre- or post-deadline situations, in Study 2 we did not attempt to observe participants' actual behavior in a second anagram round. Rather, we led participants to believe that there would be such a round, and had them complete a questionnaire just before they thought that round was to begin. The questionnaire contained items assessing behavioral intentions pertaining to four of the five action phase model self-regulation strategies; only compensatory primary control (seeking help or assistance) was not assessed, as this strategy could not be implemented given the design of the study. This approach enabled us to better disentangle engagement (i.e., selective primary and secondary control) from disengagement (i.e., compensatory secondary control).

Also different from Study 1, we manipulated social identification rather than simply observing it so that we could evaluate its causal role. We predicted overall differences in group-

guided self-control strategy usage that depended on the group's deadline phase, but predicted as well that these differences would be stronger for participants who were highly identified with the group than for those who were only weakly identified. Thus, for the goal engagement strategies (SPC, SSC) we expected highly identified group members to report intending to use them to a much larger extent in the pre- compared to the post-deadline condition. We predicted just the reverse for the goal disengagement strategies (CSC-prot, CSC-dis), with highly identified participants reporting the intention to use them to a lesser extent in the pre- compared to the post-deadline condition (Hypothesis 2). For weakly identified participants we predicted much weaker differences in strategy uses as a function of the group's deadline phase (Hypothesis 3). Overall, this amounts to predicting a three-way interaction between deadline phase, identification, and strategy type.

Method

Design and Participants

A total of 132 undergraduate students participated in this study. It involved a 2 (deadline phase: pre vs. post) x 2 (identification: high vs. low) x 4 (group-guided self-control strategies) design, in which the third variable was a repeated, within subjects factor. Between three and six participants were run per session in individual cubicles. They were told that the study was simultaneously being run in other locations on the university's campus. In the debriefing session we this time systematically asked if participants had understood the remuneration criteria (see Study 1). A total of 12 participants were not considered because they were unable to state correctly how much money they would be paid and so evidently did not understand the remuneration system used (pre-deadline/low identification condition $n=3$, post-deadline/low identification condition $n=5$, pre-deadline/high identification condition $n=1$, post-deadline/high identification condition $n=3$). The final sample thus comprised 120 participants (77 females;

mean age 22 years).

Procedure

The procedure used in this study differed from that used in Study 1 in only three ways. *First*, based on a bogus *perception style test*, all participants were ostensibly classified as 'focal' (vs. 'basal') perceivers in a minimal group paradigm task adapted from Otten and Wentura (1999, Experiment 2). The test required participants to report what image they first saw in each of a set of ambiguous images offering two interpretations (e.g., a duck or a rabbit, two faces or a vase). As in Experiment 1, it was stated that performance of both perception styles was identical (i.e., that they entailed qualitative but not quantitative differences).

Second, we manipulated *strength of social identification* using a bogus pipeline procedure developed and successfully implemented by Faddegon et al. (2008). Participants completed 10 trials of judging whether a presented word had a positive or negative value attached to it. Before the to-be-judged words appeared, either 'focal group' or 'basal group' was flashed on the screen for 100 milliseconds, ensuring that participants were aware of this. The immediately following to-be-judged words were related to social identification (e.g., positive: 'connected'; negative: 'divided') and pairing was mixed so that both 'focal group' and 'basal group' was flashed before positive and negative words. Participants were then told that based on their reaction times we calculated how strongly connected they were to their group, with strong ties indicated by faster (slower) responses to positive (negative) words after being flashed with the label "focal group" and a reversed pattern following the label "basal group." Furthermore, participants were told that scores on this test ranged between 0 and 100, and that the average score in their group was 48. In the strong (weak) identification condition participants received a score of 63 (33), indicating that they were above (below) the group mean and that their ties were thus stronger (weaker) than average (cf. Ellemers, Spears, & Doosje 1997). Subsequently, participants' social identification

was assessed.

Finally, the *third* way in which the procedure used here differed from that used in Study 1

is that we employed a questionnaire to assess the extent to which participants intended to use

each of four control strategies in the second anagram round (which they believed to take place).

Having participants fill in this questionnaire while believing that the second anagram round was

about to take place allowed us to assess participants' intentions pertaining to using four of the

five action-phase model's self-regulation strategies and thus a more fine-grained analysis of

intended engagement and disengagement.

Measures

Control strategies. Participants' intended use of each of four group-guided self-control

strategies was assessed with the Optimization in Primary and Secondary Control Scales

(Heckhausen, Schulz, & Wrosch, 1998; for other context-specific versions see Heckhausen et al.,

2001; Heckhausen & Tomasik, 2002; Wrosch & Heckhausen, 1999). On a scale ranging from 1

(=*does not apply*) to 5 (=*fully applies*) participants rated the extent to which each item applied to

them. *Selective primary control* (SPC) was assessed with five items (e.g., "While working on the

second anagram round I will show a lot of effort"; M=4.18, SD=0.80; α=.89). *Selective*

secondary control (SSC) was also assessed with five items (e.g., "While working on the second

anagram round I will tell myself that we can make it if we really want to"; M=3.94, SD=0.82;

α=.81). *Compensatory secondary control - protection* (CSC-prot) was assessed with nine items

targeting different strategies of protecting one's motivational resources (e.g., "While working on

the second anagram round I will think: My group is probably very good at other tasks"; M=2.71,

SD=0.67; α=.82). Finally, *Compensatory secondary control - goal disengagement* (CSC-dis) was

assessed with three items (e.g., "While working on the second anagram round I will tell myself

that the group goal of reaching a certain amount of points is nonsense"; M=2.23, SD=0.99;

α=.81)^3.

Manipulation checks. Eight items from Luhtanen and Crocker (1992; private and public collective self-esteem) assessed social identification on a scale ranging from 1 (=*does not apply*) to 7 (=*fully applies*; e.g., "I identify with this group"; *M*=4.16, *SD*=1.08; α=.91). We chose this scale because it is a widely used and accepted measure of social identification. In addition, to check the effectiveness of the deadline manipulation, we included the first two manipulation check items used in Study 1, *r*(120)=.78, *p*<.001.

<div align="center">*Results*</div>

Manipulation Checks

Social identification. Confirming the success of the manipulation, a 2-way ANOVA that included identification and deadline as factors revealed that participants in the high (vs. low) identification condition reported higher ingroup identification (M_{high}=4.45, SD_{high}=1.04; M_{low}=3.84, SD_{low}=1.03), *F*(1,116)=10.57, *p*<.001, η_p^2=.08; all other *F*s<1.

Deadline condition. Likewise confirming the success of our second manipulation, an analogous ANOVA indicated that participants in the pre- (vs. post-) deadline condition believed that the group goal could still be attained to a larger extent (M_{pre}=3.76, SD_{pre}=1.41; M_{post}=2.26, SD_{post}=1.85), *F*(1,116)=23.88, *p*<.001, η_p^2=.17; all other *F*s<1.

Control Strategies

To test our hypotheses, we conducted a mixed-design 3-way ANOVA with deadline (pre vs. post) and identification (high vs. low) varying between participants, and control strategy (SPC, SSC, CSC-prot, and CSC-dis) varying within participants (for a summary of the ANOVA results, see Table 1).

There was a trend toward a main effect of identification, *F*(1,116)=3.34, *p*=.07, η_p^2=.03. Strategy usage differed across strategies, *F*(3, 348)=160.52, *p*<.001, η_p^2=.58, and depended both

on deadline, as indicated by a significant strategy-by-deadline interaction, $F(3, 348)=7.92$, $p<.001$, $\eta_p^2=.06$, and identification, as indicated by a significant strategy-by-identification interaction, $F(3, 348)=2.65$, $p<.05$, $\eta_p^2=.02$. Most importantly, however, the predicted three-way interaction between strategy, deadline, and identification qualified all previous effects, $F(3, 348)=5.35$, $p=.001$, $\eta_p^2=.04$. There were no other significant effects, $Fs<1$.

Exploring this 3-way interaction by looking at the identity-by-deadline interactions for each strategy separately revealed that these 2-way interactions were indeed significant for three of the four strategies [for *selective primary control*: $F(1, 116)=4.36$, $p<.05$, $\eta_p^2=.04$; for *selective secondary control*: $F(1, 116)=5.57$, $p<.05$, $\eta_p^2=.05$; for *compensatory secondary control – protection*: $F(1, 116)=5.93$, $p<.05$, $\eta_p^2=.05$; for *compensatory secondary control – disengagement*: $F(1, 116)=2.33$, $p=.13$, $\eta_p^2=.02$]. We conducted simple comparisons to further explore the interactions. In line with our predictions, these comparisons were significant for all control strategies (including compensatory secondary control – disengagement) for participants in the high identification condition (all $Fs>8.5$, all $ps<.01$), indicating that they were indeed affected by the deadline manipulation (Hypothesis 2), but not for participants in the low identification condition (Hypothesis 3; all $Fs<1$, all $ps>.42$; see Figure 3). Moreover, all significant differences in control strategy usage for participants in the high identification condition were in the predicted direction. These participants intended to use both *selective primary control* ($M_{pre}=4.51$, $SD_{pre}=0.60$; $M_{post}=3.88$, $SD_{post}=0.86$), $F(1, 116)=10.63$, $p<.01$, and *selective secondary control* ($M_{pre}=4.27$, $SD_{pre}=0.63$; $M_{post}=3.68$, $SD_{post}=0.87$), $F(1, 116)=8.52$, $p<.01$, to a greater extent in the pre-deadline than in the post-deadline condition. By contrast, they intended to use both *compensatory secondary control –protection* ($M_{pre}=2.30$, $SD_{pre}=0.73$; $M_{post}=2.96$, $SD_{post}=0.76$), $F(1, 116)=17.95$, $p<.001$, and *compensatory secondary control – disengagement* ($M_{pre}=1.66$, $SD_{pre}=0.80$; $M_{post}=2.38$, $SD_{post}=0.99$), $F(1, 116)=9.32$, $p<.01$, to a

lesser extent in the pre-deadline than in the post-deadline condition.

Discussion

Manipulating both identification and deadline phase, our prediction that stronger differences in control strategy usage would appear for group members in the high identification condition than for those in the low identification condition, and that these differences would correspond to the group's deadline phase, was supported by all simple comparisons between highly identified group members in the pre- compared to the post-deadline condition, though results were more pronounced for the pre- compared to the post-deadline strategies. Specifically, high identification participants were more likely to report intending to use selective primary and secondary control, and were less likely to report intending to use either form of compensatory secondary control (goal disengagement, and protection of motivational resources), in the pre-deadline condition than in the post-deadline condition. That participants in the low identification condition did not show this same pattern of intended strategy usage supports the idea that social identification moderates the relationship between group deadlines and self-control strategies. It is only when members identify with their group that the group's goal is important to the social self and so leads them to engage in phase-appropriate group-guided self-control. These findings replicate Study 1, but also go beyond them by revealing a more differentiated pattern of (dis)engagement as captured by the various self-control strategies. And most fundamentally, they demonstrate that the control strategies suggested by the action-phase model for the personal self (Heckhausen, 1999) apply as well when the—highly identified—social self is the agent of action.

General Discussion

The two studies reported here demonstrate that self-control strategies suggested for deadline phases of individual goal pursuit (Heckhausen, 1999; Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996) also apply to the social self when it is central to individuals'

identity. To be more precise, our studies provide evidence that group members' social

identification determines the impact of a deadline phase on strategy usage. Specifically, using

both behavioral (Study 1) and behavioral intention measures (Studies 1 and 2), it was shown that

the more group members identified with the ingroup, the more they displayed engagement during

the pre-deadline phase and disengagement during the post-deadline phase. In both studies,

weakly identified participants' strategy usage seemed not to be affected by the groups' deadline

status. Overall, highly identified participants were more likely than weakly identified participants

to engage in the type of group-guided self-control called for by the groups' deadline situation.

Importantly, these results demonstrate that, depending on the situation, social identification may

aid either engagement and the expenditure of effort on behalf of the group, or disengagement and

the withdrawal of effort. To our knowledge, they provide the first experimental evidence that

stronger identification may sometimes result in less effort (van Knippenberg, 2000). Although

social identity research has heretofore focused exclusively on the interplay of identification and

engagement, the present findings suggest that understanding *dis*engagement may be just as

important (Wrosch et al., 2002, 2003, 2007). As such, they complete the literature within the

social identify approach by showing that the logical opposite of engagement – disengagement –

is also subject to the influence of the strength of group members' social identification.

These findings would appear to fit well with, and extend, earlier research concerning the

effects of extrinsic rewards on intrinsic motivation. They extend previous research because our

experimental remuneration procedure ensured that only future ingroup members, not participants

themselves, would benefit from task-engagement. Ingroup remuneration was expected (Lepper et

al., 1973), salient (Ross, 1975), and contingent on task-engagement (Ryan et al., 1983), thus

fulfilling several of the conditions shown to be necessary for the undermining of intrinsic

motivation. However, if there was an undermining of intrinsic motivation, it was due to the

availability of group – not personal – rewards. As such, these findings offer a broader

perspective on the role of social identification, as they indirectly support the notion that highly

identified members' reduced engagement in the post-deadline phase as a result of their intrinsic

motivation being undermined during the pre-deadline phase by the prospect of obtaining

extrinsic rewards for future ingroup members. By contrast, weakly identified members'

unvarying engagement even in the post-deadline phase presumably resulted from their continued

intrinsic motivation to perform the task for its own sake (Deci et al., 1999), as obtaining ingroup

rewards was not sufficiently attractive to undermine their intrinsic task motivation. To test this

idea, future research should additionally vary the nature of the task (intrinsically interesting vs.

not).

The current findings converge with other research addressing group-based self-regulation

that has so far attended to the application of self-discrepancy theory (e.g., Bizman, Yinon, &

Krotman, 2001; Petrocelli & Smith, 2005) and regulatory focus theory (e.g., Faddegon et al.,

2008; Sassenberg & Hansen, 2007) to the social self (for a collection see Sassenberg & Woltin,

2008). Complementing this earlier work by demonstrating the importance of social

identification, our results for the first time show that theories of self-regulation concerning the

usage of self-control strategies can also be applied to the group-level. As such they strengthen

the notion that "since self-regulatory systems (…) operate at individual, relations, and group

levels, this process should operate in conceptually the same way at each level" (Smith, 2002, p.

33).

Our findings go beyond previous social identity research in two important aspects. First,

while earlier work has generally looked either at productivity measures (Worchel et al., 1998),

turnover and absenteeism (Cooper-Hakim & Viswesvaran, 2005), or global distinctions between

action/non-action (Wright, 2001; for overviews on social identification and engagement, see

Doosje et al., 1999; Ouwerkerk et al., 1999), we investigated fine-grained control strategies. These allow for more specific predictions, as they addresses the question of *how* group members strive for a goal when faced with (dis)advantageous action ecologies. As argued elsewhere (Sassenberg & Woltin, 2009), this process-oriented perspective complements prevailing need-based approaches to (inter-)group behavior, which focus on the content of motivation (i.e., *what* group members strive for, such as gaining a positive social identity, Tajfel & Turner, 1986, or reducing uncertainty, Hogg, 2007). Second, and more importantly, whereas previous research has investigated the role of identification on group-serving engagement during urgent goal striving (e.g., Doosje, Spears, & Ellemers, 2002; Ouwerkerk et al., 2000), it has not examined the role of identification in contexts of lost opportunities for group goal attainment. We thus extend the above research by suggesting that stronger identification does not always leads to stronger engagement – sometimes it leads to the opposite, stronger disengagement.

Implications for the Self-Control Strategies and Social Identity Research

We have demonstrated in the present research that the self-control strategies suggested for individual goal pursuit around deadlines are also applicable to the social self. Future research should investigate how these strategies can be further refined at the group level. Here, selective primary control might also entail coordinating one's actions with other ingroup members to ensure optimal group goal pursuit (McGrath, Arrow, & Berdahl, 2000; Peterson & Behfar, 2005). The importance of such coordination is stressed by research on the effects of time scarcity on group performance (Janicik & Bartel, 2003; Karau & Kelly, 1992). Furthermore, in competitive *inter*group contexts goal striving might also imply hindering outgroups, a topic that should also be examined in future research. In line with this, Scheepers, Spears, Doosje, and Manstead (2003) showed that intergroup discrimination serves both an instrumental function, especially when the ingroup is threatened, and an identity confirmation function, especially in

ingroup reinforcing situations. Direct hindering of outgroups may constitute a further aspect of selective primary control, whereas verbally derogating them may serve selective secondary control (i.e., meta-motivationally supporting goal striving). Finally, longitudinal research would help to clarify the role of social identification as both a cause and effect of self-control processes (Ellemers, 1993), and add to the currently scarce research on dynamic identification processes in general (for an exception see Doosje et al., 2002).

Apart from the above, the current studies suggest that future research might fruitfully explore the role of high levels of identification on group members' contribution to sunk cost and escalation of commitment effects in group contexts of severely limited or lost opportunities for success (Bazerman, Giuliano, & Appelman, 1984; Dietz-Uhler, 1996; Kameda & Sugimori, 1993; Smith, Tindale, & Steiner, 1998; Street & Anthony, 1997; Whyte, 1993).

Limitations

There are some limitations to what can be concluded based on our findings. First, in order to explore whether the moderating relationship of social identification is liner or curvilinear, future research would be advised to include a group of moderately identified participants to test if effects are driven by highly identified participants appropriately responding to deadlines, by weakly identified participants not responding appropriately, or both. Second, our participants were made part of an ad hoc quasi-minimal group with clear temporal deadlines for achieving task goals. However, group members are unlikely to disengage from goals that are highly relevant to their social identification or that define their group, especially in times when they have "nothing to lose" by challenging the *status quo* (Scheepers, Spears, Doosje, & Manstead, 2006; Spears, 2010). Furthermore, participating in ingroup specific activities (Phinney, 1992; Williams & Lawler, 2001) has elsewhere been argued to constitute an element of social identity expression (Ashmore et al., 2004).[4] Overall, disengagement processes such as those captured by

the post-deadline strategies studied here are unlikely to be employed by group members who are pursuing social identity goals. Also, many social movements emerge in highly disadvantageous contexts and require group members to have high levels of perseverance (Sweetman, Leach, Spears, Pratto, & Saab, 2013). Thus, our results concerning disengagement only speak to clear-cut temporal group deadlines after which further engagement would be dysfunctional. Finally, our results are silent as to how chronic group membership (e.g., ethnicity) impacts group-guided self-control around deadlines. Nonetheless, initial evidence points to the operation of similar processes, at least for long lasting group memberships (e.g., university students and soccer fans; Woltin, 2008).

Conclusions

Three main conclusions can be drawn from the current research. *First*, social identification moderates the effect of a group's deadline phase on group-guided self-control strategies of engagement and disengagement. In pre- (post-) deadline phases, higher identification led to self-control in terms of engagement for (disengagement from) group goals while for weak identification no differential effects were obtained. These results demonstrate that social identification aids both engagement and disengagement processes. *Second*, it also contributes by calling for future research exploring the role of intrinsic and extrinsic motivation in highly and weakly identified group members' intentions and actions. *Third*, the current findings suggest that the self-control strategies proposed to be important for understanding individual goal pursuit also hold for the social self, and so provide further support for the idea that group-based self-regulation as a phenomenon indeed exists.

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Tables

Table 1

Overview on ANOVA Results in Study 2 (N = 120)

	df	*F*	*p*	η_p^2
Within subjects effects				
Strategy	3, 348	160.52	<.001	.58
Strategy x Deadline	3, 348	7.92	<.001	.06
Strategy x Identification	3, 348	2.65	.049	.02
Strategy x Deadline x Identification	3, 348	5.35	.001	.04
Between subjects effects				
Deadline	1, 116	.93	.34	.01
Identification	1, 116	3.34	.07	.03
Deadline x Identification	1, 116	.15	.70	.00

Figure Caption

Figure 1. Adaptive control strategies before and after passing deadlines according to the action-phase model (adapted from Wrosch & Heckhausen, 1999; excluding compensatory primary control).

Figure 2a. Time spent on unsolvable anagrams (0-120 sec) as a function of identification and deadline condition (pre vs. post) in Study 1. Error bars depict standard errors.

Figure 2b. Willingness to exert additional effort (1 = *not at all* to 7 = *very much*) as a function of identification and deadline condition (pre vs. post) in Study 1. Error bars depict standard errors.

Figure 3. Mean endorsement of control strategies of participants as a function of deadline condition (pre vs. post) and identification condition (high vs. low) in Study 2. Error bars depict standard errors.
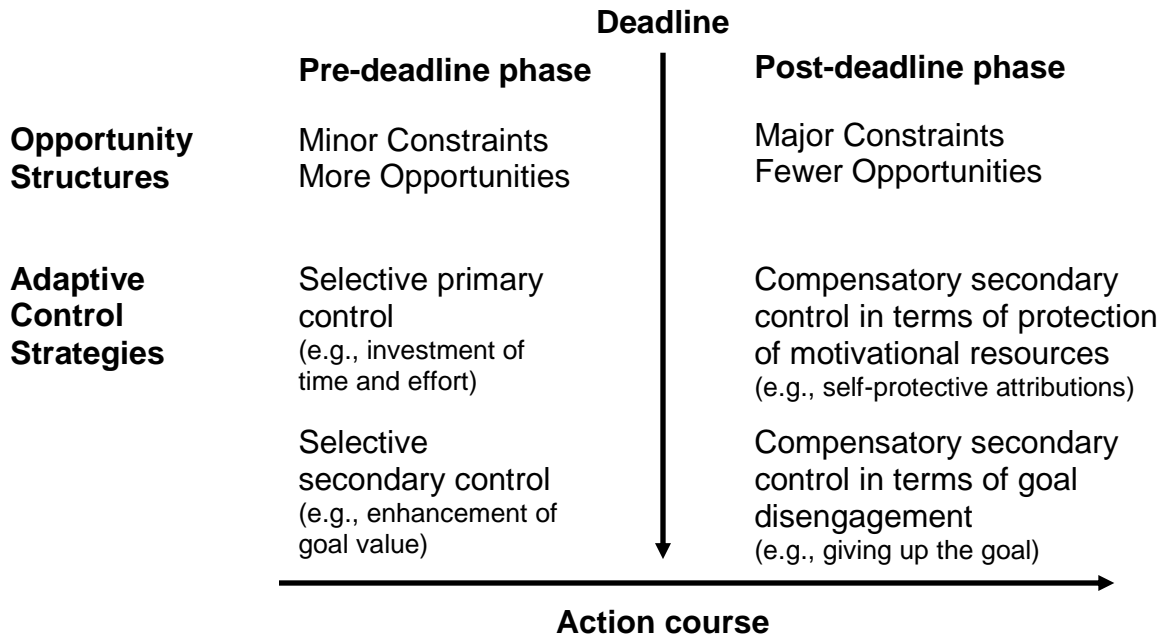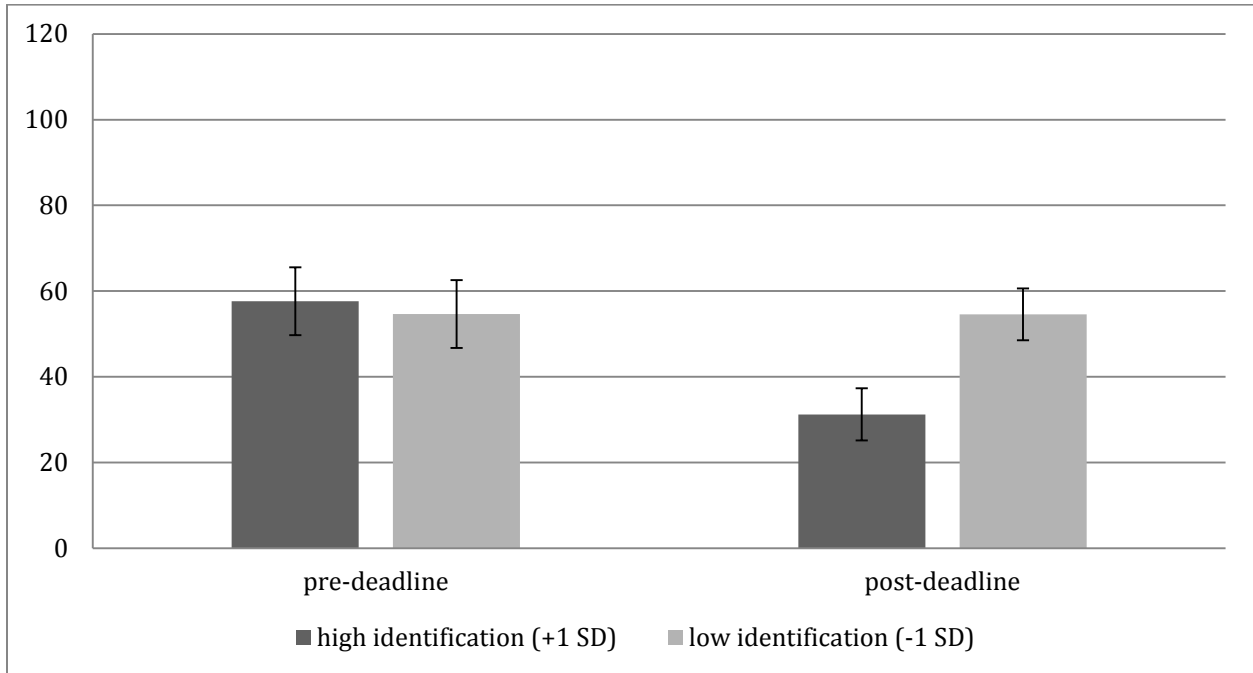
Figure 1 TOP

Deadline

	Pre-deadline phase	**Post-deadline phase**
Opportunity Structures	Minor Constraints More Opportunities	Major Constraints Fewer Opportunities
Adaptive Control Strategies	Selective primary control (e.g., investment of time and effort)	Compensatory secondary control in terms of protection of motivational resources (e.g., self-protective attributions)
	Selective secondary control (e.g., enhancement of goal value)	Compensatory secondary control in terms of goal disengagement (e.g., giving up the goal)

Action course

Figure 2a TOP

Figure 2b TOP

Figure 3 TOP

high identification/pre-deadline   high identification/post-deadline
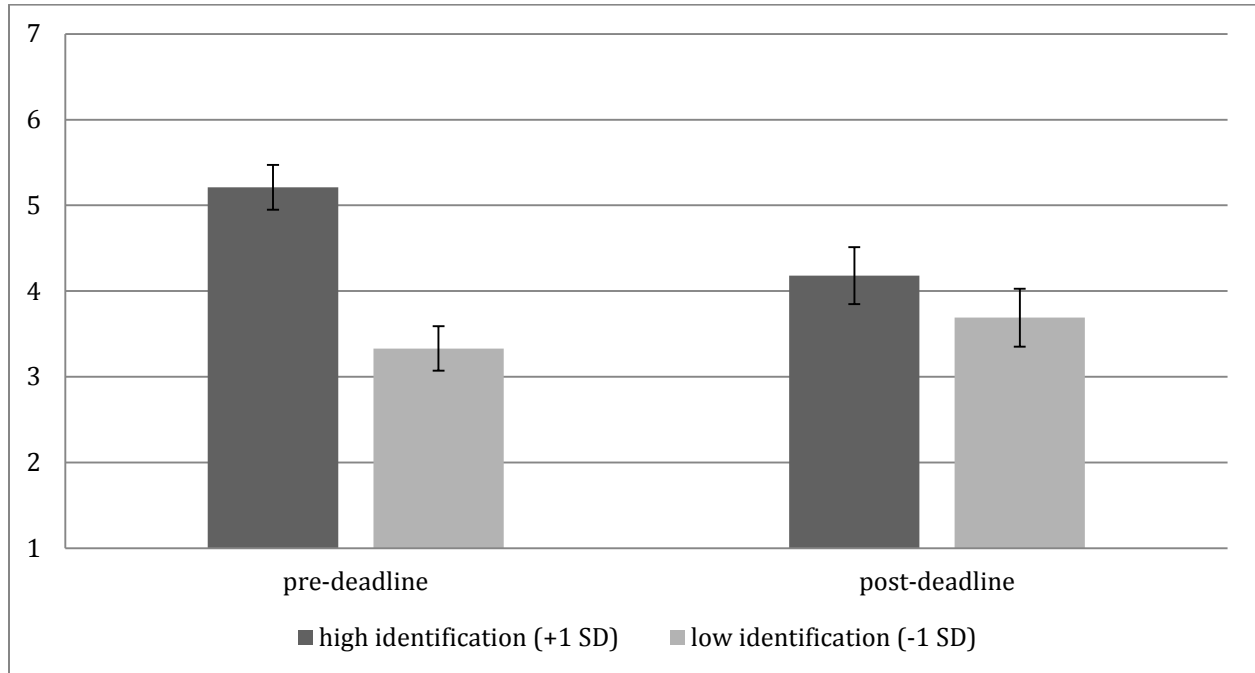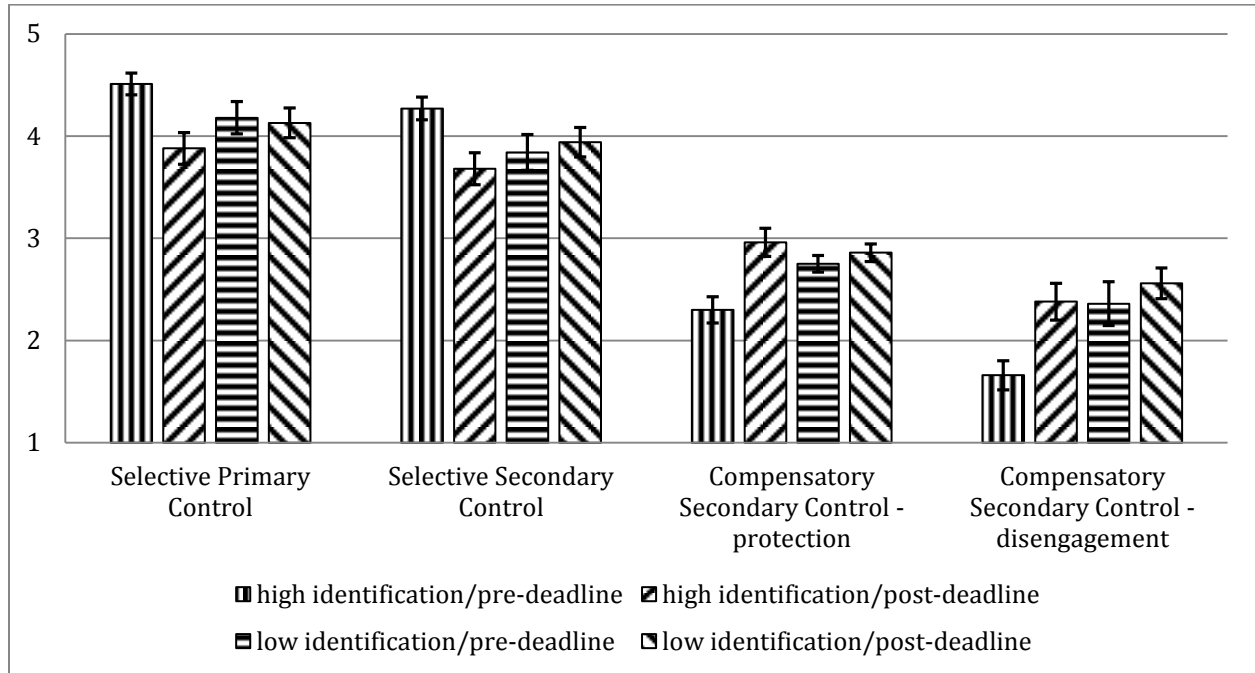low identification/pre-deadline   low identification/post-deadline

Footnotes

[1] We would like to thank James R. Larson, Jr. for pointing out this argument.

[2] Time spent on unsolvable anagrams and willingness to exert additional effort after the end of the experiment were correlated, $r(125)=.19$, $p<.05$, further corroborating that this measure also tapped into engagement on behalf of one's ingroup.

[3] The size of our sample does not allow for confirmatory factorial analysis, which would require a minimum of 210 participants for meaningful results and a chance to replicate the proposed four-factor structure. In our sample, as in other work using these scales, the pre-deadline scales (SPC and SSC) were correlated, $r(120)=.84$, $p<.001$, and the same holds for the post-deadline scales (CSC-prot and CSC-dis), $r(120)=.20$, $p=.031$. CSC-dis was negatively related to SPC, $r(120)=-.48$, $p<.001$, and SSC, $r(120)=-.54$, $p<.001$, while CSC-prot was not related either to SPC or SSC (ps$>.17$). Thus, the overall pattern of correlations suggests that the pre- and post-deadline strategies can be distinguished, and that the two post-deadline strategies are differentially related to the pre-deadline strategies. Concerning the rather high correlation between SPC and SSC, it should be noted that they rely on self-reports where it may be difficult to distinguish between "I will do something" and "I will keep my mind on something." Importantly, however, both scales measure conceptually different aspects (i.e., action oriented vs. cognitive components of engagement), which is reflected in them having differential relations to third variables, as documented by other research (e.g., Heckhausen & Tomasik, 2002; Heckhausen et al., 2001; Wrosch, Heckhausen & Lachman, 2000).

[4] However, according to Ashmore et al. (2004) such behavioral indicators need to be treated with caution, as they may serve several disparate goals (e.g., claiming identity, gaining acceptance) and are influenced by factors other than identification (e.g., compliance).