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PLANNING HIGH PERFORMANCE

Can Groups and Teams Benefit from Implementation Intentions?

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> Es ist nicht genug zu wissen, man muss auch anwenden; es ist nicht genug zu wollen, man muss auch tun.
>
> (Knowing does not suffice, one has to apply it; willing does not suffice, one has to act.)
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> *J. W. von Goethe,* Wilhelm Meisters Wanderjahre

Challenging organizational goals such as meeting high sales targets, becoming highly consumer-friendly, or "going green" can only be attained if employees change their behavior successfully. Unfortunately, even when employees readily adopt organizational goals, they frequently fail to act on them. Holland, Aarts, and Langendam (2006) observed employees' recycling behavior after their company had introduced a convincing "go green" initiative, including appeals to recycle plastic cups and paper waste. Despite the company's persuasive appeals, employees did not increase their recycling behavior one week, two weeks, and one month after the baseline measure. However, participants in an experimental condition who had been asked to additionally plan out when, where, and how they wanted to recycle paper waste and plastic cups (i.e. had formed an *implementation intention*, Gollwitzer, 1993, 1999), increased their recycling behavior and recycled almost all of their waste. Implementation-intention participants even maintained their high levels of recycling behavior one week, two weeks, and one month later.

At the level of the individual, implementation intention effects have been observed for numerous types of goals (e.g. health goals, Adriaanse, Vinkers, De Ridder, Hox, & De Wit, 2011; profit goals, Kirk, Gollwitzer, & Carnevale, 2011; emotion regulation goals, Webb, Schweiger Gallo, Miles, Gollwitzer, & Sheeran, 2012) and with various populations (e.g. company employees, Holland et al., 2006; undergraduate students, Hagger et al., 2012; and even drug addicts under withdrawal, Brandstätter, Lengfelder, & Gollwitzer, 2001), and the processes underlying their effectiveness are quite well understood (see Gollwitzer & Oettingen, 2011; Gollwitzer & Sheeran, 2006, for review and meta-analysis). In the present chapter, we therefore ask whether organizations can effectively use implementation intentions to attain their goals. As teams nowadays commonly perform work in organizations (West, 2012), we will focus on the use of implementation intentions in groups and organizational teams. Although performance groups are sometimes distinguished from organizational teams, this distinction can be blurry at times and they seem to have much in common (Kerr & Tindale, 2004). We therefore use the terms interchangeably throughout the chapter but

will consider potential differences in the discussion. We will first connect the concepts of planning and goal pursuit, then introduce implementation intentions, and discuss how groups and teams can use this highly effective type of plan with special regard to the level of planning within groups (i.e. group plans vs. individual plans). We will then report our most recent research on these questions. Lastly, we will discuss how our approach relates to other planning research, how teams in organizational settings might profit from our findings, and why we are confident that they will.

The Role of Planning in Goal Pursuit

McGrath (1984) defines planning as the activity "to lay out a course of action by which it can attain an *already chosen* objective" (p. 127, emphasis added). Planning is therefore concerned with the implementation of a set goal (i.e. that one is already committed to attaining). Why is planning important with respect to goal attainment? Lewin's psychology of action (Lewin, Dembo, Festinger, & Sears, 1944; see Frese & Zapf, 1994; Hacker, 2003, for the action approach in organizations) assumes that one has to master two subsequent tasks in order to attain one's goals: strongly committing to goals and successfully implementing them. In line with the assumption that committing strongly to goals is not sufficient to actually attain them, setting goals accounts for no more than 28 percent of the variance in goal-directed behavior (Sheeran, 2002).

More recent research suggests that four hindrances most commonly prevent people from implementing their goals (Gollwitzer & Sheeran, 2006): people may fail to get started with acting, fail to stay on track once goal striving has been started, overly deplete their resources during goal striving, thereby making the pursuit of equally important current goals impossible, and lastly, people may fail to disengage from futile means or unattainable goals. Unsatisfactory intention-behavior relations point to the fact that mere goals are not sufficient to deal with these hindrances but that planning out how to strive for one's goal might be necessary. Indeed, one type of plan has been shown to be highly effective in improving goal attainment and performance by helping people to overcome the aforementioned hindrances: implementation intentions.

Planning with Implementation Intentions

Gollwitzer (1999, 2014) highlighted the importance of furnishing goals (also referred to as goal intentions) with implementation intentions. Goal intentions specify a desired endstate or response one is committed to attaining or performing (e.g. "*I want to attain endstate Z!*" or "*I want to perform response Z!*"); in contrast, implementation intentions specify when, where, and how one wants to act towards an already set goal in an if (situation)–then (response) format (e.g. *And if situation Y occurs, then I will show response Z!*). To form an implementation intention, one therefore has to identify a goal-relevant situational cue (such as a good opportunity or a critical obstacle) and link it to an instrumental response (such as a goal-directed response in an opportune situation or a coping response to an obstacle). Implementation intentions are always formed in addition to goals and are therefore considered to be subordinate plans. Research over the past 20 years has consistently supported the assumption that forming implementation intentions improves goal attainment (see Adriaanse et al., 2011; Bélanger-Gravel, Godin, & Amireault, 2013; Gollwitzer & Oettingen, 2011; Gollwitzer & Sheeran, 2006, for review and meta-analyses).

How do the beneficial effects of implementation intentions come about? Action control by mere goals relies on effortfully initiating goal-directed responses in appropriate situations (Gollwitzer, 1993). As this is a deliberative process, it is prone to disruption by external factors (e.g. distractions). Action control by implementation intentions, on the other hand, facilitates goal attainment on the basis of *psychological mechanisms* related to the if-part and the then-part of the plan: first, the situation

specified in the if-part becomes cognitively activated and is thus easily accessible from memory (e.g. Achtziger, Bayer, & Gollwitzer, 2012; Parks-Stamm, Gollwitzer, & Oettingen, 2007; Webb & Sheeran, 2007; Wieber & Sassenberg, 2006). Second, the response specified in the then-part is linked to the situation specified in the if-part (Webb & Sheeran, 2007). This situation–response link allows for swift response initiation once the specified situation is encountered (e.g. Parks-Stamm et al., 2007; Webb & Sheeran, 2007) without requiring another conscious intent (Bayer, Achtziger, Gollwitzer, & Moskowitz, 2009). Some studies have even demonstrated that the accessibility of the situational cue in the if-part and the strength of the if (situation)–then (response) link mediate the performance increases caused by implementation intentions (Webb & Sheeran, 2007, 2008). In effect, if–then planners immediately recognize the specified situational cue (accessibility of the if-part) and respond swiftly with the specified response (if–then link).

Action control by implementation intentions is assumed to possess features of automaticity (e.g. immediacy, efficiency, redundancy of conscious intent; cf. Bargh & Chartrand, 2000). Indeed, numerous studies indicate that if–then planners respond more swiftly (Gollwitzer & Brandstätter, 1997, Study 3), deal more effectively with high cognitive demands (e.g. act on their goals even when under cognitive load; Brandstätter et al., 2001; Cohen & Gollwitzer, 2008), and do not require a conscious intent to initiate the pre-planned response when encountering the specified situational cue (e.g. respond even if the situational cue is presented subliminally, Bayer et al., 2009; or the superordinate goal has been activated outside of their awareness, Sheeran, Webb, & Gollwitzer, 2005, Study 2). Importantly, the automaticity created by implementation intentions is strategic in the sense that it is based on an act of will: if-then planners intentionally form an implementation intention and thereby allow the situational cue (if-part) to trigger the goal-directed response (then-part). In other words, if–then planners delegate their action control to an external situational cue. Furthermore, implementation intentions do not run off if one abandons one's goal or the plan itself. In line with this claim, implementation intention effects require sufficient commitment to their superordinate goal (Sheeran et al., 2005, Study 1) and to the execution of the implementation intention (Achtziger et al., 2012). Overall, action control by implementation intentions possesses features of automaticity (i.e. is efficient and immediate, and does not require a conscious intent to respond), and is strategic, since willful decisions (i.e. the selection of an opportune situation and an instrumental response, commitment to the plan and the goal) put their automatic effects into place.

Implementation intentions help deal with all four of the aforementioned hindrances to goal striving (i.e. getting started, staying on track, not overextending oneself, and abandoning futile goals). Implementation intentions help to get started with goal striving because they help seize good opportunities before they pass (e.g. obtaining mammography, Rutter, Steadman, & Quine, 2006), help remember to act (e.g. taking vitamin pills regularly, Sheeran & Orbell, 1999), and help initiate actions despite initial reluctance (e.g. to perform unpleasant testicular self-examination, Sheeran, Milne, Webb, & Gollwitzer, 2005). Many important goals cannot be achieved with a single response or action, however. Therefore, even successfully initiated goal striving is jeopardized if staying on track fails. Fortunately, implementation intentions can help to stay on track with goal striving as well. In line with this claim, implementation intentions have been shown to protect ongoing goal striving against inferences from inside (e.g. Achtziger, Gollwitzer, & Sheeran, 2008) and outside the person (e.g. Wieber, von Suchodoletz, Heikamp, Trommsdorff, & Gollwitzer, 2011). Importantly, even when inferences cannot be anticipated, furnishing goals with implementation intentions specifying a goal-directed action can stabilize ongoing goal striving and thereby make it less prone to disruptions (Bayer, Gollwitzer, & Achtziger, 2010). Implementation intentions further allow for automated goal striving that does not require high levels of deliberation and the self should therefore not become depleted (Muraven & Baumeister, 2000). Indeed, participants with an implementation intention performing taxing tasks in classic ego-depletion paradigms did

not show reduced self-regulation capacity in subsequent tasks (Webb & Sheeran, 2003) and performed well even when in a state of depletion (Bayer et al., 2010, Study 2). Lastly, implementation intentions help disengage from futile goals (Wieber, Thürmer, & Gollwitzer, in press) or means (Henderson, Gollwitzer, & Oettingen, 2007). All in all, implementation intentions help overcome the most common hindrances to goal attainment. Given these well-established, beneficial effects of implementation intentions for individuals, one might wonder whether if–then planning can promote group performance.

Implementation Intentions in Groups and Teams

Why would groups need implementation intentions? Group performance is commonly defined as "the process and outcome of members' joint efforts to attain a collective goal" (Levine & Moreland, 1990, p. 612). Improving group performance is therefore synonymous with improving a task group's goal attainment. As we have argued elsewhere (Wieber, Thürmer, & Gollwitzer, 2012, 2013), groups also face hindrances during goal striving that implementation intentions should help overcome. Whenever groups face such hindrances, having planned out goal striving in advance with respective implementation intentions should thus help to improve group performance.

But how can groups and teams form implementation intentions? In order to address this question, we will now briefly introduce our perspective on what groups are and how they perform tasks. Groups have no *bodily existence* beyond their members. That is, one can shake hands with a group member but not with a group per se. In order to explain the reality of the group, small group theories and team theories (e.g. Arrow, McGrath, & Berdahl, 2000; DeShon, Kozlowski, Schmidt, Milner, & Wiechmann, 2004) commonly draw on the interdependence of group members. Through their members' relation to and interaction with each other, groups produce outcomes and attain properties that are not easily attributed to any individual alone within the given group (e.g. cognitive products, Levine, Resnick, & Higgins, 1993). On the other hand, individuals within groups still maintain a certain degree of independence, which allows the group to be distinguished from the individual member. One can therefore distinguish between the individual level (group members) and the group level (group); groups are therefore said to be multi-level systems (Arrow et al., 2000; DeShon et al., 2004).

The fact that groups have no bodily existence raises the question of how groups can perform tasks. The combination of contributions framework (Hinsz & Ladbury, 2012; Steiner, 1972) assumes that individuals contribute by performing actions required for the task at hand, and the group then combines these contributions into the group's performance. In line with this perspective, collective actions can be conceptualized as individuals' (group members') intentional contributions to a group performance that the group combines into its performance. However, a group-as-system perspective assumes that individuals are embedded within groups (Arrow et al., 2000). This suggests that group members maintain a certain degree of independence and that they do not have to act collectively (e.g. with respect to contributing to a group performance) but can also act independently (e.g. with respect to their individual performance which may or might not aid group performance; cf. Crown & Rosse, 1995).

Assuming that individuals in groups can act individually and collectively, they should also be capable of planning these actions individually or collectively. This distinction raises the question of how individual and collective planning can be distinguished. Groups and teams allow for a variety of planning techniques that individuals alone do not have, such as developing plans conjointly (Burkert, Scholz, Gralla, Roigas, & Knoll, 2011), using skilled leaders to plan group performance (Marta, Leritz, & Mumford, 2005), and planning for actions that are performed conjointly (Prestwich et al., 2012). However, including such techniques into the definition of collective

planning risks confounding planning with other constructs. For instance, defining collective planning as a joint process necessitates group interaction and sharedness, which are both known to improve performance (e.g. Marks, Zaccaro, & Mathieu, 2000; Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000). Similarly, if collective planning can only include actions that are performed conjointly, its effectiveness might be limited simply because some actions are better performed individually. From a basic research approach that seeks to isolate the sole effect of a variable (in this case: collective planning), these shortcomings are quite unsatisfactory. Consequently, we do not make assumptions about the source of the plan or how widely it is shared, but define collective planning parsimoniously as *a plan referring to the group*. Thus, collective plans refer to the group (e.g. we, us, ours; a "we-plan") and individual plans refer to the individual (e.g. I, me, mine; an "I-plan").

As implementation intentions traditionally refer to the individual (e.g. "*And if* I *encounter situation Y, then* I *will show response Z!*"), this individual–collective distinction suggests a new type of plan that refers to the group: *collective implementation intentions* (cIIs; e.g. "*And if* we *encounter situation Y, then* we *will show response Z!*"). Such "we-plans" or cIIs refer to the group and specify when, where, and how the group wants to act towards their collective goal. Because group members can pursue collective goals (e.g. Weldon & Weingart, 1993) and implementation intentions were also observed to improve goal striving in groups and in social contexts (Wieber et al., 2012, 2013), forming cIIs should create a situation–response link that aids collective goal striving. When group members have the goal to perform well and pre-plan when, where, and how to act or respond towards this goal collectively (i.e. form a cII), this should help them master the challenges of collective goal striving. When groups successfully integrate these contributions, this improves performance.

Teamwork and Taskwork

In order to ask how IIs and cIIs can help groups and teams perform well, it is helpful to understand what constitutes high performance. A common distinction is that between teamwork and taskwork (Marks, Mathieu, & Zaccaro, 2001). Taskwork is commonly defined as "a team's interactions with tasks, tools, machines, and systems" (Bowers, Braun, & Morgan, 1997, p. 90). Taskwork thus constitutes group members' actions that are directly related to task performance. But working side by side without interacting with one another is seldom enough to attain high team performance – in other words, teamwork is needed. Teamwork entails effective team interaction processes (Marks et al., 2001), that is, "members' interdependent acts that convert inputs to outcomes through cognitive, verbal, and behavioral activities directed toward organizing taskwork to attain collective goals" (Marks et al., 2001, p. 357). High performance therefore needs both taskwork and teamwork (Crawford & Lepine, 2013). If implementation intentions were to aid high performance, they would therefore prove effective for improving both taskwork and teamwork.

Empirical Evidence: Planning Teamwork with Implementation Intentions

What can implementation intentions do for teamwork? Interactions between team members are crucial for high performance (e.g. Marks et al., 2000; Mathieu et al., 2000) but are resource-intense as they require listening carefully, controlling one's emotions, and developing social interaction scripts. In line with the idea that teamwork is a resource-intense process that is difficult to master, Crawford and Lepine (2013) recently noted that "inherent in each of the teamwork processes is a communication requirement of additional time, attention, and energy from each team member, beyond attention that must be dedicated to taskwork" (p. 37). As discussed earlier, the benefits of planning with implementation intentions include a perceptual readiness for the specified situation and a situation response-link that leads to swift response initiation (Parks-Stamm et al., 2007; Webb

& Sheeran, 2007; Wieber & Sassenberg, 2006). Implementation intentions thereby strategically automate goal striving, which makes it efficient (e.g. one shows the pre-planned response when preoccupied with something else; Cohen & Gollwitzer, 2008). We consequently hypothesized that forming implementation intentions can support interaction and teamwork, thereby leading to group performance improvements.

Teamwork and Cooperative IIs

Cooperation crucially depends on the individual group member and therefore IIs geared towards cooperative teamwork should improve group performance. Even when cooperation is beneficial in terms of superior work results and performance, it is still more laborious than acting individually (Crawford & Lepine, 2013). This is because cooperation requires acting with other team members and therefore is more difficult to initiate than individual work. Implementation intentions are known to help initiate time-sensitive actions, such as going to vote on election day (Nickerson & Rogers, 2010), or easily forgotten actions, such as recycling disposable cups and paper waste (Holland et al., 2006). Moreover, implementation intentions also help to deal with disruptions, as they spell out how to act towards one's goal (Bayer et al., 2010). Both initiating responses at the right time (e.g. when a teammate is available) and shielding these actions against disruptions (e.g. talking about the task at hand instead of the game last night) should promote teamwork. Planning out how to cooperate in advance with IIs should therefore support group performance.

In order to test this hypothesis, Wieber and colleagues (Wieber, Gollwitzer, Fäsche, Heikamp, & Trommsdorff, 2015) conducted an experiment with ten-year-old schoolchildren who had been in one class for about three years. They invited groups of four to perform a cooperative puzzle task. Each participant received a number of puzzle pieces, some of which he or she was allowed to add to the puzzle (individual pieces, 1 point), but others which had to be handed over to a teammate before being added to the puzzle (cooperative pieces, 3 points). All groups learned the rules that cooperative pieces had to be handed to the respective teammate but that these pieces were also worth more points. Before performing the task, all groups formed the goal, "I want to score as many points with my group as possible!", but only experimental groups added the II: "And if I see a cooperative part, then I will give it to the appropriate child immediately!" In line with the prediction that this if (situation)-then (response) link improves teamwork, II groups scored more points overall and more cooperative points in particular. IIs geared towards handing over respective pieces thus indeed improved the cooperative behavior of group members; as handing over a puzzle piece cannot be performed independently (i.e. the respective teammate has to accept and add the piece), these findings support the idea that IIs can increase cooperation.

Teamwork and Cooperative cIIs

Cooperation is a group-based process and therefore should also be supported by collective planning with cIIs. Although little research has examined collective planning with cIIs to date, we assume that cIIs – just as IIs – create a situation–response link that aids goal striving. If this is true, cIIs that specify a cooperative behavior should also support effective teamwork. Effective teamwork is difficult when common practice or a routine cannot be applied to a problem at hand. Indeed, although group decisions are highly informed when group members capitalize on their unique knowledge (*unshared information*; Lu, Yuan, & McLeod, 2012; Mesmer-Magnus & DeChurch, 2009), groups routinely disregard such information – even if it comes up during discussions (Gigone & Hastie, 1993, 1997; Mojzisch, Grouneva, & Schulz-Hardt, 2010; Mojzisch & Schulz-Hardt, 2010) – and instead rely on their common knowledge (i.e. shared information; Wittenbaum & Park, 2001).

When unshared information is crucial to identifying the best decision alternative (i.e. in *hidden profile* situations; review by Stasser & Titus, 2003), this routine of ignoring unshared information leads groups to make suboptimal decisions and squander their performance potential. IIs are known to help break routines (Aarts, Dijksterhuis, & Midden, 1999) and can trigger deliberation about a certain issue when needed (Henderson et al., 2007). Since we assume that cIIs rely on similar processes to IIs, we predicted that cIIs to jointly reflect on available information should promote the consideration of crucial, unshared information during group discussions and improve group decisions in hidden profile situations.

We (Thürmer, Wieber, & Gollwitzer, 2015b, Study 2) tested this prediction in a laboratory experiment. Groups of three students formed the goal to make the best decision possible in several consecutive decision cases and we incentivized this goal by promising a monetary reward for each correct decision. Groups randomly assigned to a cII condition added the collective if (situation)-then (response) plan: "And when we finally take the decision sheet to note our preferred alternative, then we will go over the advantages of the non-preferred alternatives again." To ensure that the expected differences in decision quality were not due to different knowledge of the task, control participants added the same response strategies but without the situation–response link: "We will go over the advantages of the non-preferred alternatives again." Groups then worked on three hidden profile decision tasks. For each task, group members first received individual information pointing to a suboptimal decision alternative. After studying their material, groups gathered and discussed which alternative to choose. At the end of their discussion, groups marked their preferred alternative on a decision sheet. To analyze the discussion content, we recorded the group discussions. In line with prior research, solving the hidden profile decision cases was very difficult: Only about 6 percent of the cases were solved. However, comparing both experimental conditions showed that none of the control groups solved any of the hidden profiles, but about a third of the cII groups solved at least one case. Thus, the cII did indeed improve group decisions. Since only the entire group can identify the best alternative in hidden profile situations, this finding supports the assumption that cIIs can support teamwork. Indeed, when looking at the discussion content, cII groups jointly recapitulated more crucial information as they had pre-planned. In sum, this study demonstrates that cIIs geared toward improving group interaction indeed improve teamwork and lead to better group decisions.

Teamwork and Non-Cooperative cIIs

One might wonder whether an implementation intention always has to spell out how to cooperate in order to improve group interaction and teamwork. As discussed earlier, groups perform tasks through their members' contributions and we therefore conceptualized collective goal striving as one's willful contribution to a group performance. Collective goal striving should consequently be a cooperative process by nature. Indeed, with respect to goal setting, research (van Mierlo & Kleingeld, 2010) has found that group members with collective goals use more cooperative task strategies than group members with individual goals. If cIIs indeed support collective goal striving, they should therefore support cooperation such as verbal interaction between group members, even if they do not specify these behaviors explicitly.

To test this assumption, interdependent physical persistence tasks (e.g. lifting a weight together, Köhler, 1926; see Kerr & Hertel, 2011, for a review) are well suited. Such tasks can be performed cooperatively (e.g. with more verbal interaction) but also more individually (e.g. with less verbal interaction). Therefore, the difference between individual and collective goal striving should become apparent in naturally occurring verbal interaction. We (Thürmer, Wieber, & Gollwitzer, submitted-b, Studies 1 & 2) tested this hypothesis in two small group laboratory experiments with

a well-established persistence task (adapted from Bray, 2004) that allowed for but did not necessitate verbal interaction. Groups all formed the goal to perform well and performed a baseline persistence round. Before the second, experimental, round, all groups received a plan with strategies that are known to help deal with detrimental states (Thürmer, McCrea, & Gollwitzer, 2013; Wieber et al., 2011) such as muscle pain. II groups received the individual if–then plan "And if my muscles hurt, then I will ignore the pain and tell myself: I can do it"; cII groups received the same if–then plan but with collective phrasing: "And if our muscles hurt, then we will ignore the pain and tell ourselves: We can do it"; and control groups received the same information in an individual or collective phrasing but not in an if–then format. Besides performance (task persistence), we analyzed verbal group interaction. As expected, both the II and the cII improved performance in comparison to the respective control group without an if–then plan. This supports the assumption that individual and collective goal striving are possible in groups, and that both types of goal striving can be supported by respective if–then plans. However, groups which had formed a cII communicated more than II groups, as indicated by the number of words spoken during task performance. Moreover, cII groups referred more to the group (first-person plural pronouns used, cf. Pennebaker, Mehl, & Niederhoffer, 2003) but II group members referred more to themselves (first-person singular pronouns used). This pattern of results suggests that both IIs and cIIs can support performance in interdependent persistence tasks but that they do so in different ways: while IIs support individual goal striving with little and self-referred interaction, cIIs support collective goal striving with more and group-referred interaction.

However, in this first experiment verbal interaction was only measured, which makes causal inferences difficult. To clarify the causal direction of our findings, we ran another experiment in which we manipulated the task communication. Our reasoning was as follows: if cIIs support collective goal striving, they should lead to better performance when the task is better suited to collective goal striving (e.g. encourages verbal interaction). On the other hand, if IIs indeed support individual goal striving, they should lead to better performance when the task is better suited to individual goal striving (e.g. prevents verbal interaction). In a replication of the first persistence study, we therefore manipulated whether group members were encouraged to communicate or were prevented from communicating. As predicted, the cII led to better performance when participants were encouraged to communicate (e.g. faced each other and wore a headset around their neck) and the II led to better performance when participants were prevented from communicating (e.g. looked away from each other and wore a headset on their ears). Both experiments are therefore in line with the assumption that IIs support individual goal striving, that cIIs support collective goal striving, and that both types of implementation intentions can support group performance. These findings moreover suggest that cIIs support teamwork even when they do not address cooperative behavior directly.

In sum, implementation intentions proved to be quite effective in improving teamwork behaviors. Both IIs and cIIs tailored towards cooperative behaviors were effective in promoting teamwork. Moreover, even when cIIs did not specify cooperative behaviors, they led to more teamwork, as indicated by increased interaction. This suggests that one should plan for tasks that require teamwork with respect to one's group – either by planning collectively or by specifying cooperative behaviors. Implementation intentions thus offer a variety of possibilities to support teamwork.

Empirical Evidence: Planning Taskwork with Implementation Intentions

High performance not only requires teamwork but also taskwork. Whereas teamwork is about how teams interact with each other in order to coordinate their actions, taskwork concerns what teams are doing or producing (Marks et al., 2001). Taskwork thus comprises "a team's interactions with

tasks, tools, machines, and systems" (Bowers et al., 1997, p. 90). At times, teamwork and taskwork can be difficult to distinguish (Marks et al, 2001): when does task-related action end, and where does coordinating interaction begin? However, given the definition of teamwork as interdependent acts, it should be less likely to occur when interaction between group members is limited. Therefore, in addition to measuring task variables, we limited interaction during performance for this second set of studies concerned with taskwork.

While the effectiveness of IIs without interaction is well known, no studies have tested this in cIIs yet. This raises the question whether cIIs are also effective when group interaction is limited. One of the observed benefits of cIIs concerning teamwork is that they support group interaction. One might therefore argue that cIIs specifying performance-enhancing responses will only be enacted with the group members. However, we hypothesized that cIIs still draw on intra-individual processes (i.e. group members' ability to regulate their behavior willfully). Therefore, cIIs should improve performance even when interaction is limited during task performance.

Taskwork without Interaction

We first sought to test whether cIIs work in interacting groups when interaction is limited during planning and task performance. If the formation and execution of cIIs solely rely on group interaction, no effect is to be expected. On the other hand, if cIIs do indeed rely on intra-individual processes (i.e. the heightened availability of the if-situation and the formation of an if–then link), we should observe cII effects despite such limited interaction. To test this assumption, we used an idea-generation task. In idea generation, a collectivist norm is detrimental (Goncalo & Staw, 2006) because it entails viewing oneself as interdependently connected with others (Bechtoldt, Choi, & Nijstad, 2012). As argued earlier, we also assume that collective goal striving entails acting interdependently and we therefore hypothesized that collective goals would be detrimental to idea generation. A cII to come up with new ideas immediately, on the other hand, should automate goal striving and therefore improve idea-generation performance. This should be the case even when interaction is limited during task performance.

We (Thürmer, Wieber, & Gollwitzer, 2015a, Study 1) tested this prediction in a laboratory experiment. We first created strong and meaningful group memberships by having group members interact and leading them to believe that they had a common future. Multiple student participants talked to each other (e.g. came up with a common group name related to their goal to be creative) and learned that they would perform an interesting and creative task (develop a movie script) or a boring and less creative task (develop a financial plan for a movie) depending on their group performance in a creativity test. However, the following creativity test containing the independent measures and dependent measures was performed fully independently, that is, without interaction (see Weingart & Weldon, 1991, for a similar approach). Participants were then asked to form a plan for the following creativity test. This is where we manipulated the referent and the implementation intention factors. Plans either referred to the individual (I) or to the group (we); implementation intention participants received the if–then plan: "And when I (we) press ENTER, then I (we) will immediately start thinking about a new idea!" (cII phrasing in parentheses). Control participants received similar instructions, but without the if–then link. All participants then generated uses for a common object (a knife). In line with earlier findings showing that it is difficult to perform creativity tasks collectively (e.g. Goncalo & Staw, 2006), collective goal striving was less successful than individual goal striving. Participants who set goals and plans with a collective referent (we) generated fewer ideas from fewer semantic categories than participants who set goals and plans with an individual referent (I). However, the cII increased performance and led to the generation of as many ideas from as many semantic categories as individual goals

and plans. Since group members were not allowed to interact during task performance, this finding is in line with our assumption that cIIs also rely on intra-individual processes. The II did not increase performance further, which might indicate that generating ideas individually was a fun and easy task (Stroebe, Nijstad, & Rietzschel, 2010) that did not require if–then planning to be performed successfully.

Taskwork without Interaction in Representation of the Group

One might wonder whether cIIs can also improve goal striving when no group interaction occurs during goal striving. It might be, for instance, that cIIs require group members to interact just before plan formation in order to commit to the plan successfully. Similarly, one might argue that group members all have to execute the plan, even if they do not interact with each other, because a single group member will not be committed to execute the necessary responses independently. On the other hand, we predict that cIIs rely on intra-individual processes that run even if group members are not present during any of these stages and do not perform the same task. Therefore, cIIs should be effective even when a group member acts in representation of his or her group (e.g. in *disjunctive tasks*, Steiner, 1972) without the other group members. A task that is commonly performed by a single individual for his or her group is grocery shopping (e.g. for the family, Polegato & Zaichkowsky, 1994). Unplanned purchases (impulse shopping) are very common in this setting (Park, Iyer, & Smith, 1989) and impulse purchases are likely when group norms favor impulse shopping (Luo, 2005). However, even when impulse shopping norms favor unplanned purchases, cIIs to take only what one needs should automate goal striving and help one stick to one's shopping list.

To test this prediction, we (Thürmer, Wieber, & Gollwitzer, submitted-a, Study 2) established two different group memberships – one with a detrimental norm and one with a supportive norm. Qualitative and quantitative pretesting showed that students belong to their peer group (i.e. friends from home) and their fellow student group (i.e. friends from university), that both groups are important, but that they have different norms when it comes to shopping: while peers have an indulgence norm and support impulse shopping (see also Luo, 2005), fellow students do not have such a norm and instead prefer being frugal. In the first part of the main experiment, student participants read a text describing either typical student activities (e.g. meeting at a friend's house to study together) or typical peer activities (e.g. meeting at a friend's house to hang out together). In the second part of the experiment, participants first formed one of three plans before performing an impulse shopping task. The cII participants formed a collective if–then plan constituting a useful strategy ("And if we want to put something in our basket, then we will only take what we really need"). Participants in one control condition received the same strategy but without the if–then link ("We will only take in our basket what we really need"), and those in a second control condition received an if–then plan with all relevant words that did not constitute a helpful strategy ("And if we want something that we really need, then we will put it in our basket!"). By doing this, we sought to determine whether the if–then format contributes to cII effects. Participants' task was to shop for dinner for their respective group (peers vs. fellow students) to prepare pasta and tomato sauce. Analyzing the content of their shopping baskets revealed that the cII did indeed reduce impulse purchases in groups with and without detrimental norms. Moreover, the if–then format further improved the effectiveness of the helpful strategy to take only what one needs. This finding suggests that the if–then format indeed contributes to cII effects. In sum, cIIs can support performance, even without any interaction with the group and in the presence of detrimental norms.

Taskwork without Interaction that Requires Sacrifices for the Group

A remaining question is whether cIIs even support taskwork that benefits the group but is costly for the individual. Group interests and individual interests are often in conflict, and behaving in one's group's best interests in such situations requires individual sacrifices (Hardin, 1968). These *social dilemmas* are difficult to resolve and can lead group members to behave detrimentally for their group (Komorita & Parks, 1995; Weber, Kopelman, & Messick, 2004). This is because temptations trigger selfish goals that are in conflict with cooperative group goals (see Shuhua & Frese, 2013, for a discussion of goal conflicts). Such selfish goals are strong when other group members' interaction is limited (i.e. in *one-shot games* where decisions are not disclosed until all relevant decisions have been made). This is because cooperation strategies such as reciprocity (*tit-for-tat*) are impossible to pursue without knowledge of past decisions. If-then planning is not only able to support concrete goal-directed responses but can also trigger the representation of a superordinate goal and thereby prioritize it over conflicting goals (Kirk et al., 2011; Stroebe, van Koningsbruggen, Papies, & Aarts, 2013). This reasoning is in line with research showing that a crucial role of plans is to prioritize goals (Shuhua & Frese, 2013). Furnishing a cooperative group goal with a cII that specifies a reminder of one's focal goal should help prioritize this goal over conflicting selfish goals.

To test this prediction, we (Thürmer, Wieber, & Gollwitzer, submitted-b, Study 3) used a mixed-motive social dilemma task that evoked an implicit cooperative group goal (i.e. to make cooperative pricing decisions). However, as cooperative decisions were costly for the individual (i.e. there was a monetary incentive for the individual to defect) the task also evoked a selfish goal to defect. After learning about their group and the task, participants received "decision training." The training either contained the cII "When we are about to make our pricing decision, then we will consider the group's revenue," the II "When I am about to make our pricing decision, then I will consider my revenue," or a neutral control plan, referring neither to the group nor to the individual: "When the decision screen appears, then a decision has to be made." Participants then played eight rounds of a pricing game (adapted from Sheldon & Fishbach, 2011) against purported group members without receiving feedback about the decisions of the other players (i.e. we used iterated games without feedback). We expected that the cII would help participants attain their group goal and make more cooperative pricing decisions. To test whether this expected cII-effect would generalize to situations where the group goal cannot be attained, eight rounds against purported non-group members followed. Moreover, we added a structurally similar investment game (adapted from Fischbacher, Gächter, & Fehr, 2001) at the end of the experiment to test whether the cII would generally increase cooperation within the group. Participants only learned about the other participants' decisions at the end of the experiment, thereby making it impossible for them to react to their fellow group members' decisions. As predicted, when playing against a group member, participants with the cII cooperated more than II participants or control participants. This demonstrates that cIIs even increase group performance when interaction is temporally distributed and cooperation is costly for the individual. However, cIIs specifically supported their superordinate group goal and did not generalize to other collectives (i.e. non-group members) or situations (i.e. an unrelated but structurally equivalent trust game). These findings are in line with the assumption that cIIs allow for goal-dependent automaticity in collective goal striving and rely on individuals' capability to regulate their behavior.

In sum, cIIs that specify a goal-directed response were also quite effective in supporting taskwork without interaction. This supports our assumption that the effectiveness of collective if–then plans also relies on intra-individual processes (the heightened activation of the situation and the creation of an if–then link). Indeed, cIIs were more effective in the if–then format, which has been established with regard to IIs. Moreover, cII effects were observed to be specific to their

superordinate goal. This is an important finding as it suggests that our observed planning effects are indeed goal-dependent. To add to this finding, we observed that cII effects were specific to the group they were set for. This finding supports our assumption that cIIs support collective goal striving. In short, cIIs are an applicable and effective means to support taskwork.

Conclusion and Outlook

We have organized the review of our planning research along the distinction between teamwork and taskwork. In support of our assumption that IIs and cIIs can promote teamwork, individual and collective if–then planning promoted cooperative behaviors such as sharing task resources (Wieber, Gollwitzer, et al., 2015) or revising crucial information together (Thürmer et al., 2015b, Study 2). Moreover, cIIs promoted cooperation even if they did not explicitly specify cooperative behaviors (Thürmer et al., submitted-b, Studies 1 & 2), suggesting that cIIs indeed support collective goal striving. In line with the assumption that cIIs support taskwork, collective if–then plans improved performance when interaction between group members was limited, such as during idea generation without interaction or in one-shot dilemma games (Thürmer, Wieber, & Gollwitzer, 2015a, Study 1; submitted-b, Study 3). These findings also support the assumption that collective if–then planning still relies on intra-individual processes (i.e. the willful formation of the plan which leads to the heightened mental accessibility of the situation specified in the if-part and creates a link between this situation and the response specified in the then-part). In sum, if–then plans improved both teamwork and taskwork in the face of hindrances. Since high team performance requires teamwork as well as taskwork, these findings suggest that if–then planning can help groups and teams perform well.

Why we are Confident that Implementation Intentions will Help Teams in Organizations

We conduct our experiments (included those summarized above) in the laboratory in order to ensure maximal internal validity. Therefore we mainly use *ad hoc* student groups. Therefore, the question arises: do the current findings generalize to teams in organizational settings? Whether an empirical finding generalizes to the field is a case-to-case question. While most laboratory findings generalize well (Anderson, Lindsay, & Bushman, 1999; Mitchell, 2012), there is an enormous amount of variation. It seems that medium-to-large effects replicate well (Mitchell, 2012), and therefore the magnitude of a laboratory effect can provide a first clue as to whether it will also show in the field. Gollwitzer and Sheeran (2006) found that implementation intentions had a medium-to-large effect ($d = 0.65$) across 94 independent tests and the effects in the research reported here are of a similar magnitude. This suggests that cII-effects might generalize.

However, generalizability to the field needs to be tested empirically and implementation intentions should prove effective in the field. Support for this assumption comes from recent meta-analyses testing implementation intention effects in field settings (Adriaanse et al., 2011; Bélanger-Gravel et al., 2013). Across 23 studies investigating dieting (Adriaanse et al., 2011) as well as 26 studies investigating physical activity (Bélanger-Gravel et al., 2013), implementation intentions promoted goal achievement (i.e. eating a healthier diet and increasing levels of physical activity). Further support for the notion that implementation intentions are effective in applied settings comes from a large field study ($N = 287{,}228$) which demonstrated that pre-planning when and where to vote by forming respective implementation intentions increased voter turnout at the 2008 presidential election in the United States (Nickerson & Rogers, 2010). A first study has even tested implementation intentions in an organizational context: the study on complying with

a company's recycling policy discussed at the outset of this chapter (Holland et al., 2006) demonstrates that implementation intentions help change employee behavior and achieve organizational goals (see Machin & Fogarty, 2003, for a correlational approach). In sum, field research supports the assumption that if–then planning has a considerable impact in organizational settings and helps attain high performance.

With respect to groups and teams, the question arises whether findings from group research will generalize to organizational teams. Organizational teams have usually been working together for quite some time, are responsible for an important organizational outcome, and have experience working on their task (Sundstrom, de Meuse, & Futrell, 1990). Although we have mainly used *ad hoc* student groups in the laboratory, some of our studies have incorporated characteristics typical of organizational teams. First, Wieber and colleagues (Wieber, Gollwitzer, et al., 2015) used groups of schoolchildren who had about three years' experience together in one class. Since group work is common in schools, it is highly likely that they have worked together as a team before. Despite this experience together, planning out their cooperation with an II improved their performance. Second, Thürmer and colleagues (Thürmer et al., 2015b, Study 2) incentivized group decisions and thereby made groups responsible for an important outcome: their payment in the experiment. Despite this monetary incentive, a cII led to improved decisions compared to a control group. Lastly, Thürmer and colleagues (Thürmer, Wieber, & Gollwitzer, submitted-b, Study 2) used an impulse shopping task that participants can be expected to be highly familiar with. Indeed, their shopping task was closely modeled to a supermarket that students frequently go to. Despite this task experience, planning with a cII successfully reduced impulse shopping. In sum, the present studies support the assumption that established teams which are responsible for an important organizational outcome and who have experience with the task at hand can benefit from if–then planning.

Responses that Implementation Intentions can Trigger: How If–then Planning can Help Teams in Organizations

If-then planning can support various different goal-directed responses. In the research reported here, these responses include goal-directed actions (e.g. cooperative behaviors; Wieber, Gollwitzer, et al., 2013), reflecting on different decision alternatives (Thürmer et al., 2015b, Study 2), and suppressing detrimental states (Thürmer, Wieber, & Gollwitzer, submitted-b, Studies 1 & 2). Even complex responses such as prioritizing one's focal goal over conflicting goals were supported by if–then planning (Thürmer, Wieber, & Gollwitzer, submitted-b, Study 3). If-then planning can thus support a host of goal-directed responses in groups. How can promoting such responses help organizational teams?

First, implementation intentions that specify a goal-directed action help respond swiftly when the specified situation presents itself. This is an advantage when good opportunities are easy to miss or necessary actions are somewhat uncomfortable. In organizational settings, this might be the case when new taskwork behaviors or concrete cooperation behaviors are necessary. Even though employees might realize the importance of performing these behaviors, they may fail to act at the right time. In line with the idea that new behaviors are difficult to implement in the workplace, new behaviors acquired through training are not always applied successfully on the job (Arthur, Bennett, Edens, & Bell, 2003; Baldwin & Ford, 1988). Importantly, this is even true for those highly motivated to apply those new behaviors, as demonstrated by moderate relations between motivation-to-transfer and actual transfer (e.g. Locht, Dam, & Chiaburu, 2013), and this should also be true for teams (Salas et al., 2008). Team training interventions could therefore be improved by including action implementation intention components (see Machin & Fogarty, 2003, for a correlational account of transfer implementation intentions).

Second, reflection implementation intentions that specify a reflective response before making a decision can help integrate crucial information. In an increasingly complex world, information overload is commonplace (Eppler & Mengis, 2004) and considering all the available information is difficult. Nevertheless, making informed decisions is crucial for team performance (Mesmer-Magnus & DeChurch, 2009) and improving decisions is a key interest of researchers and practitioners (Milkman, Chugh, & Bazerman, 2009). The present research suggests that if–then planning can help reflect on information available and improve decisions (Thürmer et al., 2015b). Importantly, the manipulations used only required participants to work on a paper-and-pencil form for five to ten minutes. This suggests that if–then planning is not only effective but also time- and cost-efficient.

Third, suppression implementation intentions that specify a detrimental state and link it to a suppression response help deal with detrimental states and stimuli. Detrimental states can also hinder organizational performance, such as when relationship conflict hinders team performance (de Wit, Greer, & Jehn, 2012). Although relationship conflict is ideally solved through conflict management strategies, this takes time and is not a viable option in the short term. A readily available option is to form a suppression implementation intention (e.g. "When I get angry at my co-worker, then I will ignore that and tell myself: 'let's get back to work'"). Given the consistently negative impact of relationship conflict on team performance (de Wit et al., 2012), and the repeatedly demonstrated positive effect of suppression implementation intentions (Schweiger Gallo, Keil, McCulloch, Rockstroh, & Gollwitzer, 2009; Thürmer et al., 2013; Wieber et al., 2011), this should help teams experiencing relationship conflict maintain high performance.

Lastly, prioritization implementation intentions activate the representation of one's focal goal in goal-conflict situations. This helps prioritize the focal goal and thereby attain it. Specifically, the dilemma study summarized in the present chapter shows that teams can profit from a prioritization cII that supports a collective goal when it is in conflict with an individual goal. Goal conflict between individual and group interests is common in organizations and can have a substantial impact on performance (Locke, Smith, Erez, Chah, & Schaffer, 1994). For instance, an employee might prefer to leave early on a Friday afternoon although a team member might need his or her support to finish an important presentation. Prioritizing the cooperative company goal over the personal leisure goal is difficult but important for the team's success. In line with this reasoning, voluntary contributions to organizational outcomes (*organizational citizenship behaviors*, OCB, Podsakoff, Whiting, Podsakoff, & Blume, 2009) have been shown to predict organizational performance. The present research suggests that prioritization implementation intentions can help employees prioritize their company goals and show more OCB.

In sum, implementation intentions can support a host of responses that can increase team performance. In line with the idea that implementation intentions can promote organizational performance, *action plans* ("steps toward important goals," Frese, 2010, p. 101) have been shown to be a powerful predictor of entrepreneurs' performance (Frese et al., 2007). Implementation intentions are very powerful action plans as they create situation–response links that help automate goal striving. This automaticity should help teams perform tasks efficiently and minimize errors. In other words, implementation intentions create instant routines (Gollwitzer, 1999) that may give organizations the competitive edge.

Goal Striving in Groups with Implementation Intentions and Existing Accounts of Planning

Implementation intention theory can complement existing planning accounts and research. Mumford, Schultz, and Van Doorn (2001) developed a model that describes the planning process

from setting a goal that one wants to plan for to the final execution of the plan. Plan generation includes a series of steps, such as creating an initial template, generating a first plan and its refinement, and developing backup plans. The model therefore focuses on how plans are generated and refined. Plan execution is the last step after refining the plan, but the model does not explicate how exactly a plan is executed. Implementation intention theory complements Mumford and colleagues' model in that it details how if–then plans are executed (Gollwitzer, 1999; Gollwitzer & Oettingen, 2011; Gollwitzer & Sheeran, 2006): If-then planners recognize the specified situation immediately and respond swiftly in the pre-planned manner. Implementation intention research thereby treats planning as an independent variable (i.e. some participants or groups receive an implementation intention while others do not). Since this conceptualization allows subjects to be assigned to planning conditions randomly, it helps understand the causal effect of implementation intentions on performance (cf. Rubin, 1974). Connecting Mumford and colleagues' model of planning with implementation intention theory, future applied research could explore how teams come up with effective implementation intentions independently. High-performing teams might develop routines in which they identify when, where, and how they can attain their performance goals. In line with this idea, high-performance teams have been shown to evaluate their tasks and actions critically on a regular basis (i.e. have high *reflexivity*, West, 1996), which might already lead them to plan when, where, and how to act on their goals in the future. Further support for the idea that these conceptualizations of planning complement each other comes from implementation intention research that has compared self-generated and prescribed implementation intentions. Armitage (2009) had participants generate their own implementation intention or provided one. Results showed that both provided and self-generated implementation intentions had a positive effect of similar magnitude compared to control conditions without if–then plans. The model of planning processes (Mumford et al., 2001) can thus help us understand how people come up with helpful implementation intentions themselves.

Another line of research emphasizes that the quality of planning contributes to the positive effects of planning on performance. For instance, Smith, Locke, and Barry (1990) suggested that high-quality planning can be characterized by:

> (1) a future orientation, (2) extensive interaction between organizational members, (3) a systematic and comprehensive analysis of the organization's strengths, weakness, opportunities, and threats, (4) a clear definition of the roles and functions of all members and departments, and finally, (5) the development and communication of action plans and the allocation of resources to action plans.
>
> *(p. 124)*

Moreover, only plans suitable for the task at hand lead to performance enhancement, while unsuitable plans decrease performance (Earley & Perry, 1987). These findings are in line with implementation intention theory, which suggests that a very specific type of plan promotes goal achievement in the face of hindrances. Indeed, the if–then format has been found to be highly effective (Chapman, Armitage, & Norman, 2009) and implementation intention effects are stronger for difficult goals (Dewitte, Verguts, & Lens, 2003; Gollwitzer & Sheeran, 2006; Hall, Zehr, Ng, & Zanna, 2012).

Mumford, Schultz, and Osburn (2002) further suggest that planning can take place at multiple levels, such as the individual, the group or team, or the entire organization. In our research, we have so far looked at planning at the individual and the group level. Mumford and colleagues' research suggests that extending our framework to the organizational level can enhance its utility for applied settings. Furthermore, Mumford and colleagues' research points to the importance of interactions between multiple levels in an organization. Our research discussed in the present

chapter is in line with this: plans referring to the group had effects both at the group and at the individual level. On the organization level, planning has been observed to promote performance when culturally appropriate (e.g. in Germany) but to hamper performance when it is not culturally appropriate (e.g. in Ireland; Rauch, Frese, & Sonnentag, 2000). This might also be true for implementation intentions: if an organization sets implementation intentions that are not accepted by the teams and employees within the company, they will likely have no effect. In sum, we have touched on the complexities of planning between the different organizational levels, which might provide a fruitful basis for future research.

Goal Striving in Groups with Implementation Intentions and Motivation

II- and cII-effects are based on strong goal commitment (Sheeran, Webb, & Gollwitzer, 2005; Thürmer, Wieber, & Gollwitzer, submitted-b, Study 3), and if–then planning can thus be expected to have a beneficial effect only when teams actually want to attain their goals. In turn, when the issue is to ensure sufficient worker motivation to comply with company goals, mere IIs and cIIs cannot be expected to have strong effects. In such cases, implementation intentions need to be supplemented with an intervention that ensures high goal commitment. A highly effective intervention in this regard is *mental contrasting* (Oettingen, 2000, 2012; Oettingen, Pak, & Schnetter, 2001). During mental contrasting, one contrasts the desired future with the reality that impedes the attainment of this future (e.g. obstacles). By doing so, one selectively and strongly commits to those goals that are feasible and desirable (Oettingen et al., 2001). Recent research supports the assumption that mental contrasting and implementation intentions complement each other: mental contrasting with implementation intentions (see review by Oettingen, Wittchen, & Gollwitzer, 2013) ensures strong goal commitment and action initiation and thereby improves goal attainment. When employee motivation is at stake, the combination of mental contrasting with implementation intentions should therefore be particularly effective. This might also be the case with regard to teams, an assumption that should be tested in future research.

Another well-established way to increase employee and team motivation is goal setting. Goal-setting theory (reviews by Locke & Latham, 1990, 2006, 2013) maintains that challenging and specific goals lead to better performance than easy or unspecific goals. Arguably, forming implementation intentions also adds specificity to one's goal. However, this specificity differs in kind: in goal setting, one quantifies the desired outcome (goal), which makes discrepancies easier to detect. In contrast, by forming implementation intentions one plans out how to achieve an already set goal by specifying actions and responses. The research reported in this chapter shows that groups can use implementation intentions, and goal setting has also been applied to groups successfully (review and meta-analysis by Kleingeld, van Mierlo, & Arends, 2011; O'Leary-Kelly, Martocchio, & Frink, 1994). Importantly, the individual–collective distinction discussed in the present chapter has also been shown to be crucial for goal setting. It has been argued that "groups offer the potential for setting goals at multiple levels of performance" (van Mierlo & Kleingeld, 2010, p. 525) as challenging-specific goals in groups can refer either to the individual (individual goals) or to the entire group (collective goals; Crown, 2007; Crown & Rosse, 1995; Locke & Latham, 1990). A recent meta-analysis on goal setting in groups (Kleingeld et al., 2011) showed that while collective goals had a positive effect on group performance on average, individual goals had, on average, no effect. When it comes to goal setting, referring to the group (setting collective goals) thus improves performance but referring to the individual is not always beneficial (Crown & Rosse, 1995; van Mierlo & Kleingeld, 2010). In the present chapter, we show that this individual–collective distinction also makes a difference for implementation intentions. This is quite remarkable since goal-setting effects rely on increased motivation and implementation

intention effects on automating goal striving – the finding that the individual–collective distinction plays a role in both phenomena suggests that it is quite ubiquitous in goal pursuit in groups.

In closing, we return to challenging organizational goals and changing employee behavior. The research summarized here demonstrates the effectiveness of if–then planning in improving important performance behaviors related to teamwork and taskwork. By forming simple if–then plans, participants were able to overcome hindrances in goal striving and thereby improve their group performance. Further, we hope that we have made a compelling case as to why we are confident that our basic research lab findings could have an impact in field settings and for organizational scientists and practitioners. Future research will show whether this optimism is justified – we look forward to it!

Acknowledgments

We thank Michael Frese and the members of the Social Psychology and Motivation Lab at the University of Konstanz for their helpful comments on earlier versions of this manuscript and Srdjan Perko for language editing.

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