

Enhancing consumer behaviour with implementation intentions

Peter M. Gollwitzer, Maik Bieleke and Paschal Sheeran

Implementation intentions (Gollwitzer, 1993, 1999, 2014) are if-then plans that help individuals attain their goals. Implementation intentions have proven beneficial in various domains in which individuals fall short of attaining their goals, from health behaviour through academic achievement to interpersonal issues (for reviews, see Adriaanse, Vinkers, De Ridder, Hox, & De Wit, 2011; Bélanger-Gravel, Godin, & Amireault, 2013; Gollwitzer & Sheeran, 2006; Gollwitzer, 2014; Hagger & Luszczynska, 2014). The aim of this chapter is to present research on how implementation intentions influence the affective, cognitive and conative components of consumer behaviour. We outline the nature of implementation intentions and describe moderators and mediators identified in previous research. Next, we adopt the perspective of comprehensive models of consumer behaviour (e.g., Bettman, 1979; Blackwell, Miniard, & Engel, 2006; Howard & Sheth, 1969) and systematically review implementation intention effects along the lines of these models. Specifically, we describe how implementation intentions affect information acquisition (i.e., perception, processing and comprehension), components of the decision process (i.e., pre- and post-decisional evaluation) and internal and external influences on behaviour (i.e., affect, norms, priming and mimicry) in consumer context. We conclude by outlining topics for future research on implementation intentions in the domain of consumer behaviour.

What are implementation intentions and how do they work?

Forming implementation intentions (Gollwitzer, 1993, 1999, 2014) is a self-regulatory tool that helps to successfully attain one's goal intentions. Whereas goal intentions focus on desired future behaviours or outcomes ("I intend to reach outcome O!" or "I will perform behaviour B!"), implementation intentions specify a critical situation and link it to a goal-directed response in an if-then format: "If situation S is encountered, then I will initiate response R!" The if-component contains a good opportunity to act or an obstacle to goal attainment, while the then-component specifies the response to be initiated. The mental representation of the critical situation specified in the if-part of an implementation intention becomes a highly activated and easily accessible cue. As a consequence, the specified cue is more readily detected (e.g., Aarts, Dijksterhuis, & Midden, 1999; Webb & Sheeran, 2007) as it benefits from an attentional advantage (i.e., it draws attention) (Achtziger, Bayer, & Gollwitzer, 2012; Wieber & Sassenberg, 2006). Linking

the situation to a response moreover creates a strong mental association between situation and response, enabling immediate (e.g., Gollwitzer & Brandstätter, 1997; Orbell & Sheeran, 2000) and efficient (e.g., Brandstätter, Lengfelder, & Gollwitzer, 2001; Lengfelder & Gollwitzer, 2001) initiation of the response without needing further conscious intent (Bayer, Achtziger, Gollwitzer, & Moskowitz, 2009; Sheeran, Webb, & Gollwitzer, 2005). The heightened cue accessibility and the automatic initiation of the respective response together mediate the beneficial effects of implementation intentions on rates of goal attainment (e.g., Parks-Stamm, Gollwitzer, & Oettingen, 2007; Webb & Sheeran, 2007, 2008).

In sum, forming implementation intentions enables consumers to strategically automate a desired behaviour, and this is of tremendous importance in particular for regulating antagonistic, unwanted automatic behaviours. Consider the case of habits, developed by repeatedly performing a behaviour in a certain context (e.g., Wood & Neal, 2009). Once habitual behaviours are established, they are triggered automatically by the context and thus are hard to replace by voluntary alternative behaviours. For instance, people find it difficult to start recycling their waste using special recycling containers, given that they are used to disposing of all kinds of different waste into one single dustbin. However, forming implementation intentions helps people to strategically automate new alternative behaviours, levelling out the automaticity advantage of habitual behaviours. All they have to do is to link the critical context (e.g., disposing waste) with the wanted alternative behaviour (e.g., recycling into the designated containers) in an if-then format (see Holland, Aarts, & Langendam, 2006).

A meta-analysis (Gollwitzer & Sheeran, 2006) involving over 8,000 participants in 94 independent studies revealed a medium-to-large effect size of implementation intentions on the rate of goal attainment ($d = 0.65$) beyond the effect of holding a mere goal intention ($d = 0.36$) (Webb & Sheeran, 2006). For instance, imagine consumers intending to buy a tablet computer having carefully compared the pros and cons of different brands via Internet comparison pages and test reports. These consumers might find it difficult to use the detailed information about the different products and instead rely on salient but superficial features (e.g., appearance) once they are in the shop. To effectively overcome this difficulty, consumers could form an implementation intention like “If I make my purchase decision, then I will first consider the comparative information I have about the different brands!”

When do implementation intentions work most effectively?

Different moderating and mediating processes of implementation intention effects have been identified (Gollwitzer & Sheeran, 2006; Prestwich & Kellar, 2014). For example, people must be committed to the underlying goal intention for implementation intentions to have effects on goal attainment (Achtziger et al., 2012; Orbell, Hodgkins, & Sheeran, 1997; Sheeran et al., 2005). Beyond this moderator, research has also identified circumstances under which implementation intentions work more effectively. For instance, heightened self-efficacy boosts implementation intention effects (Koestner et al., 2006; Wieber, Odenthal, & Gollwitzer, 2010), especially when goal attainment is difficult (e.g., purchasing a computer that matches one's skills and needs). Recent research has examined how mindsets, personal feelings of control and the number of goals and plans influence the effectiveness of implementation intentions.

Concrete versus abstract mindsets

Consumers often face a tradeoff between having a powerful strategy that helps them attain a certain goal and a more flexible strategy that can be adapted to changing requirements.

For instance, in familiar situations like shopping in a local grocery, consumers usually know what action is most instrumental to achieve their goals (e.g., buying vegetables to eat healthily or cheaper brands to save money) and may primarily struggle with implementing this action because of antagonistic habitual behaviours (e.g., buying fast food or always buying products of the same brand). These situations call for one powerful strategy rather than a set of strategies to be used flexibly. Unfamiliar situations such as investing in an emerging new stock market, on the other hand, do not usually allow consumers to identify a single most instrumental action in advance. Instead, consumers should flexibly take advantage of alternative, non-planned means as they emerge rather than implementing a pre-specified action. How can this tradeoff between effectiveness and flexibility be solved when using implementation intentions? It turns out that an appropriate mindset might be the key.

Wieber, Sezer and Gollwitzer (2014, Study 1) tested the effects of mindsets on implementation intentions in a situation with a single instrumental action. Specifically, participants were asked to perform two rounds of a handgrip task. After the first round, participants formed an implementation intention (“And if my muscles start hurting, then I will ignore the pain!”) in addition to the goal to perform well. Then, an ostensibly unrelated questionnaire on personal relationships followed that induced a concrete versus an abstract mindset by asking participants *how* versus *why* they form and maintain personal relationships, respectively. This mindset manipulation influenced the effectiveness of implementation intentions in the second round of the handgrip task: How-mindset participants performed better than why-mindset participants. Apparently, the how-mindset facilitated the stimulus-controlled automaticity of implementation intentions (Gilbert, Gollwitzer, Cohen, Oettingen, & Burgess, 2009). These findings suggest that consumers who want to use an implementation intention to buy vegetables instead of fast food should envision *how* they act upon this plan, thus inducing a concrete mindset, rather than deliberating about *why* they want to eat more healthily.

Can mindsets enhance the flexibility of goal striving by implementation intentions as well? Bayuk, Janiszewski and Laboef (2010) investigated implementation intentions related to saving goals to address this question. Participants were instructed to write down how or why they save money to put them into a concrete versus abstract mindset, respectively. Afterwards, they were presented with several non-planned means of attaining their saving goals and rated the likelihood of using them. Participants were more likely to resort to non-planned behaviours when they adopted an abstract why-mindset as compared to a concrete how-mindset. Together with the results from Wieber et al. (2014), this study suggests how mindsets can solve the trade-off between effectiveness and flexibility when using implementation intentions. Consumers who want to maximize the effectiveness of implementation intentions should adopt a concrete mindset (e.g., asking themselves *how* they aim to achieve their goals), whereas consumers who wish to maintain as much flexibility as possible should rather adopt an abstract mindset (e.g., asking themselves *why* they aim to achieve their goals).

Personal feelings of control

Moods can have strong effects on consumers’ information processing and preferences. For instance, people process information about persuasive messages more carefully in a sad compared to an angry mood (e.g., Bodenhausen, Sheppard, & Kramer, 1994; Tiedens & Linton, 2001). Moreover, people in a sad mood prefer vacation destinations that promote relaxation rather than activity, while those in an angry mood prefer activity over relaxation (Rucker & Petty, 2004).

Of importance for implementation intention research, being in a sad versus angry mood is also associated with low versus high feelings of control (Keltner, Ellsworth, & Edwards, 1993).

Since forming implementation intentions and acting upon them is a form of action control, one might ask whether being in a sad versus angry mood affects the formation and effectiveness of implementation intentions. Maglio, Gollwitzer and Oettingen (2014) recently addressed this question from the perspective of emotion appraisal theories (Smith & Ellsworth, 1985) by experimentally inducing anger and sadness. For example, in one of their studies, participants named an important academic goal. In an ostensibly unrelated second task, they were instructed to take the perspective of a person who was treated unfairly (anger induction), experienced a personal loss (sadness induction) or prepared a shopping list (neutral affect). Next, participants returned to their initial task and were asked to complete sentence stems to describe how they think about their academic goal. Results showed that participants in the anger condition were significantly more likely to think about their goal in terms of if-then (implementation intention) statements than participants in the sadness condition. Subsequent experiments (Maglio et al., 2014, Studies 2 and 3) confirmed that this effect was mediated by feelings of personal control. Importantly, findings showed that angry individuals were not only more likely to form implementation intentions, but they also executed the planned behaviour more effectively. In sum, this line of research suggests that consumers in sad moods benefit less from implementation intentions, as being in a sad mood is associated with reduced personal control.

Number of goals and plans

Another important aspect regarding the strength of implementation intentions is setting an appropriate number of goals and plans. Forming single implementation intentions for goals leads to better goal attainment than forming several plans (Verhoeven, Adriaanse, Ridder, Vet, & Fennis, 2013). Verhoeven and her colleagues invited women with an intention to reduce their consumption of unhealthy snacks and asked them to initially monitor their snacking behaviour for three days by keeping a consumption diary (baseline measure). After participants had returned their diaries, they were instructed to specify either one or three implementation intentions. In the following three days, participants were again provided with a diary to monitor their snacking behaviour (follow-up measure). Participants with a single implementation intention snacked on fewer occasions and had a lower caloric intake in the follow-up measure compared to the baseline, whereas no change was observed in the condition with three implementation intentions. In a follow-up study (Verhoeven et al., 2013, Study 2), the authors argued that single plans might be superior because they avoid information interference (Kruglanski et al., 2002). In line with this reasoning, goal attainment was still optimal when participants formed multiple plans each targeting different (versus single) goals. The conclusion that can be drawn from this line of research is that consumers may formulate several implementation intentions but these should target different goals.

Moreover, consumers should feel able to manage the multiple goals they are pursuing when furnishing them with several implementation intentions. Dalton and Spiller (2012) assigned participants to single or multiple goals (e.g., “read a book for pleasure”) to be achieved in the next couple of days and induced implementation intentions by asking them how, when and where they would try to achieve their goal(s). Afterwards, participants rated their commitment to each assigned goal and also to five non-assigned goals. On each of the following five days, they reported activities related to assigned and non-assigned goals and whether they had already achieved these goals. Beneficial effects of implementation intentions were observed for a single assigned (versus non-assigned) goal but not multiple assigned (versus non-assigned) goals. Moreover, commitment of single assigned goals was increased relative to non-assigned goals, whereas commitment to multiple assigned goals was rather low and similar to non-assigned

goals. The authors attribute these differences in goal commitment and the resulting effectiveness of implementation intentions to changes in perceived goal difficulty: Planning for multiple goals highlights the difficulty of goal achievement and thus lowers goal commitment. In line with this reasoning, no differences in the effectiveness of implementation intentions for single versus multiple goals emerged when participants perceived the attainment of multiple goals as manageable (Dalton & Spiller, 2012, Study 3). Thus, forming implementation intentions for several goals is effective when attainment seems feasible and goal commitment remains high.

Taken together, the studies by Verhoeven et al. (2013) and Dalton and Spiller (2012) provide guidance for consumers who want to attain multiple goals and use implementation intentions to facilitate goal attainment. When the goals pertain to the same domain (e.g., snacking habits) it is advisable to furnish only one of these goals with an implementation intention; goals pertaining to different domains (e.g., snacking habits and thriftiness), might however each be furnished with an implementation intention. However, in the latter case consumers should be careful not to choose conflicting goals and make sure that their attainment is manageable.

Information acquisition, decision processes and behavioural influences

Comprehensive models of consumer behaviour (e.g., Bettman, 1979; Blackwell et al., 2006; Howard & Sheth, 1969) share a focus on three central aspects: information acquisition (e.g., perception, processing and comprehension), the decision process (e.g., pre- and post-decisional evaluation) and internal and external influences on behaviour (e.g., affect, norms, priming and mimicry). Again, it may be helpful to imagine a consumer who intends to buy a tablet computer. First, information about the different brands must be acquired by reading relevant pieces of information (e.g., product tests in the Internet), processing their content (e.g., attending to relevant technical features) and comprehending them in an unbiased manner (e.g., ignoring stereotypes about the country of origin). Second, available information must be evaluated (e.g., weighing the pros and cons of different brands) and updated (e.g., according to new information received in the store) during the actual decision process. Third, the decision must be protected against undesired internal (e.g., hinging the decision on an incidental mood) and external (e.g., being mimicked by the salesperson) factors that might influence the decision. Even in this simple purchase example, consumer behaviour depends on a complex interaction of several features that are often difficult to control. For instance, consumers may experience problems in acquiring relevant information (e.g., Jacoby, Chestnut, & Silberman, 1977) or find it hard to ignore irrelevant information (e.g., Meyvis & Janiszewski, 2002). Even if people have acquired relevant information, though, they may still fail to evaluate and integrate this knowledge properly (e.g., Hutchinson & Alba, 1991; Staw, 1981). As a consequence, a need for strategies that enhance consumer decision making has been recognized (e.g., Bazerman, 2001). Implementation intentions are such a strategy.

Can implementation intentions enhance information acquisition?

Perception

Consumers are often confronted with a lot of information, as companies are competing for customers' attention in a clutter of package designs, ads and product information (S.P. Anderson & de Palma, 2013; Pieters, Warlop, & Wedel, 2002). However, consumers need only a little of this information to attain their goals (e.g., identifying special offer displays in the supermarket when pursuing a thriftiness goal). Can implementation intentions facilitate the perception

of such goal-relevant information? We addressed this question based on the observation that people can *consciously* process only one stimulus at a given time and must postpone conscious processing of other stimuli until processing of the current stimulus is complete (e.g., Pashler, 1994). Differences in perceptual performance can thus be investigated by presenting two successive stimuli: When the second stimulus appears after a long delay, a higher quality of perception will allow a more immediate initiation for processing the second stimulus. However, when the second stimulus appears after a short delay, perception quality does not matter because there is plenty of time for perceiving the second stimulus. In line with this reasoning, implementation intentions should lead to faster responses towards the second stimulus for long but not for short delays, assuming that they indeed affect perception quality.

Janczyk, Dambacher, Bieleke and Gollwitzer (2015, Study 2) tested this interaction hypothesis in an experiment involving a first auditory stimulus (i.e., a tone presented via headphones) and a second visual stimulus (i.e., horizontally arranged squares). At the start of a trial, a tone was presented and three unfilled squares appeared on the screen. After one of three possible delays, either one or two squares were coloured in white. Participants had to classify the pitch of the tone and the position of the filled squares. Importantly, trials with one filled square were associated with implementation intentions (e.g., “If the left square becomes white, press the left key!”), in contrast to control trials with two filled squares in which participants were free to choose a response. In line with the interaction hypothesis derived above, responses to the second stimulus were faster in implementation intention compared to control trials for the longest delay but not for the two shorter delays. This finding indicates that implementation intentions enhance the perception of stimuli, potentially helping consumers to efficiently perceive goal-relevant information as it emerges (e.g., special offer displays in the supermarket).

Processing

Perceiving goal-relevant information is the initial step in information acquisition – but can implementation intentions also enhance its processing, in particular in the presence of distracting irrelevant information? For instance, consumers with the goal of buying organic food might search a grocery store primarily for products carrying a special organic label. This can be an arduous task, given the sheer amount of available products and the quantity of information displayed on the packages that is irrelevant to the organic shopping goal. Those consumers would benefit from a strategy that facilitates their attentional selectivity for processing goal-relevant information. Can implementation intentions enhance the attention for a goal-relevant piece of information in such a selective way? Bieleke, Dambacher, Hübner and Gollwitzer (2016, Study 3) made use of a computational model of selective attention (Hübner, Steinhauser, & Lehle, 2010) to address this question. In each trial of the study, stimuli consisted of one relevant item flanked by distracting items. Participants classified the relevant item while trying to ignore the flanking items and formed an implementation intention for one of the relevant items (e.g., “And if I see the number 2, then I will immediately press the left mouse button!”). Accordingly, processing efficiency in implementation intention trials could be compared with the baseline efficiency achieved in control trials. Fitting response time and error distributions to the computational model revealed a higher efficiency of information processing in implementation intention trials compared to standard trials: participants were more efficient in weighting and filtering sensory information, identifying the stimulus and selecting the respective response. As a consequence, they were able to classify relevant items faster and this was achieved without a drop in accuracy. Accordingly, these results suggest that implementation intentions enhance efficiency of information processing, a feature that consumers can use to selectively attend to

goal-relevant information and to shield it from irrelevant, distracting information (e.g., when searching for products with an organic label).

Comprehension

Even if consumers manage to perceive and process relevant information, they still need to arrive at an unbiased understanding of that information. This is particularly difficult when stereotypes or attitudes that can bias comprehension are activated outside of awareness (e.g., Greenwald & Banaji, 1995; Maison, Greenwald, & Bruin, 2004). Instead of judging a product solely by decision-relevant attributes like functionality or price, for instance, consumers often rely on judgements that are elicited by attitudes towards the product's country of origin (Liu & Johnson, 2005) or stereotypes evoked by the salesperson (Babin, Boles, & Darden, 1995). Similarly, the mere activation of stereotypes about one's group may decrease the likelihood of purchasing goods from out-group members independent of product quality (Lee, Kim, & Vohs, 2011). How can consumers use implementation intentions to protect comprehension from these biasing effects?

Mendoza, Gollwitzer and Amodio (2010, Study 1) tested whether implementation intentions can overcome bias engendered by automatically activated racial stereotypes. They used a computerized task that assesses how object categorization is biased by racial stereotypes. Specifically, participants were presented with images of black or white males holding either a gun or a neutral object (e.g., wallet or phone) and had to press a "shoot" button if the presented person carried a gun. As expected, participants displayed a strong racial bias reflected in higher error rates for stereotype-incongruent (e.g., black males holding a wallet) as compared to stereotype-congruent (black males holding a weapon) stimuli. However, participants who had formed the implementation intention "If I see a person, then I will ignore his race!" committed significantly fewer classification errors, indicating improved information comprehension. Further analyses revealed that this effect was caused by a reduction of the automatic activation of stereotypes.

Although highly effective, ignoring stereotypical information is not a viable strategy when people are not even aware of stereotype biases. For these situations, Webb, Sheeran and Pepper (2012) have tested implementation intentions that replace the automatically activated stereotypical response by a desired response. In one of their studies, the authors turned toward automatic responses to Muslim versus Scottish names and the attributes of terrorism versus peace. Participants were shown a pair of categories (e.g., Scottish and terrorism) at the top of the computer screen and had to press a button when a word belonging to one of those categories appeared below (e.g., Douglas or Bomb). The authors expected worse performance for incongruent (i.e., Muslim-peace) compared to congruent category (i.e., Muslim-terrorism) pairings and this hypothesis found support in a condition with standard task instructions. However, when participants had received an implementation intention specifying an alternative response in the critical situation, no differences between Muslim-terrorism and Muslim-peace pairings were observed. Further analyses revealed that this effect was due to a stronger association between Muslim and peace forged in the implementation intention condition.

Taken together, the research by Mendoza et al. (2010) and Webb et al. (2012) suggests that implementation intentions help consumers to base their decisions on properly comprehended rather than stereotypical information. This has immediate effects on decision quality; for instance, comparing products across important dimensions (e.g., price, functionality and sustainability) will probably lead to better decisions than judging the products by stereotypes about their country of origin.

Can implementation intentions facilitate the decision process?

In the decision process, consumers need to evaluate pre-decisional information (e.g., pros and cons of different alternatives) and post-decisional information (e.g., feedback) in order to make good decisions. In the following part, we review studies on how implementation intentions can facilitate information evaluation to enhance the decision process.

Pre-decisional evaluation

Consumer decisions often occur in interaction with other group members (e.g., relatives, colleagues or peers). In these cases, goal striving becomes a collective endeavour and it is important that group members share information that is relevant for making good decisions, and that they overcome obstacles to goal attainment conjointly. Thürmer, Wieber and Gollwitzer (2015) turned to problems which can be optimally solved only when group members share individually available information (Stasser & Titus, 1985) to test whether implementation intentions can facilitate the exchange and integration of decision-relevant information in groups. Participants faced different problems (e.g., renting an apartment) and initially had to make a decision based on their private information about various options. Afterwards they were given the opportunity to exchange information regarding these options with two other group members. By design, considering information held by others was the best way to solve the problems as privately held information favoured an inferior option. Optimal decisions therefore required participants to review new information about previously non-preferred options and to revise their initial choice. Prior to the task, participants set the goal to find the optimal decision alternative and control group participants received the additional strategy to “go over the advantages of the non-preferred alternatives again”. Implementation intention participants received a similar strategy in an if-then format: “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!” It was observed that control group participants made optimal decisions significantly less often than implementation intention participants. Content analyses of the group discussions revealed that implementation intention groups discussed a larger percentage of unshared information, and this enhanced information exchange in turn may have enabled them to better revise their initial decisions. These results suggest that implementation intentions can benefit consumer decision making in groups by facilitating the exchange and integration of decision-relevant information.

Post-decisional evaluation

People have difficulties in revising decisions in line with emerging negative feedback (Henderson, Gollwitzer, & Oettingen, 2007), and even persist in investing resources in an evidently vain course of action – a phenomenon referred to as the *sunk cost fallacy* (e.g., Arkes & Blumer, 1985; Staw, 1981). This problem pertains, for instance, to consumers taking an already paid for vacation even when they already regret the choice of the vacation resort (Arkes & Blumer, 1985), managers evaluating employees that they were responsible for hiring more favourably, irrespective of the employees’ performance (Bazerman, Beekun, & Schoorman, 1982) and inventors continuously spending money, time and effort on a project despite professional advice to quit (Åsterbro, Jeffrey, & Adomdza, 2007).

Given the ubiquity and severe consequences of the sunk cost fallacy (reviews by Roth, Robbert, & Straus, 2015; Sleesman, Conlon, McNamara, & Miles, 2012), Wieber, Thürmer and Gollwitzer (2015, Study 1) investigated whether implementation intentions can be used

to enhance the integration of decision-relevant feedback. They asked triads of participants to assume the role of a city council responsible for a kindergarten construction project. The task consisted of three consecutive phases in which participants decided on their investments in the project. Prior to the task, participants formed the goal “We want to make the optimal investment decision in each phase!” Goal intention participants added the control strategy “We want to judge the project as neutral observers who are not responsible for earlier investment decisions!”, whereas implementation intention participants added the if-then plan: “If we are about to make an investment decision, then we will judge the project as neutral observers who are not responsible for earlier decisions!” In the task, a sunk cost problem was created by providing feedback about the current status of the project before the investment decision in each phase. This feedback was extremely positive at the beginning (e.g., donation of a developable plot) and encouraged a high level of initial investment. However, the feedback became more and more discouraging as participants progressed through the task (e.g., detection of oil contaminations in the sandpit) and thus called for a reduction in investments.

Replicating prior research on the sunk cost fallacy, goal intention participants did not adjust their investment levels to the increasingly poor prospects of the kindergarten project. In contrast, implementation intention participants integrated the feedback in their decisions and reduced their investment level accordingly. Following up on the mechanisms of this effect, Wieber et al. (2015, Study 2) observed no differences between conditions in the amount of time spent on arriving at their decisions, but found that the concepts used in the provided strategies (i.e., “decide”, “invest”) were more accessible for implementation intention participants as compared to goal intention participants. This suggests that implementation intentions curbed the sunk cost fallacy by automating a complex information evaluation process rather than by amplifying information search.

Can implementation intentions control internal and external influences on consumer behaviour?

Several factors can exert unwanted influence on consumers’ decision making. Below, we discuss how implementation intentions can help people better manage both internal (i.e., affect and norms) and external (i.e., priming and mimicry) influences.

Negative mood and feelings

Emotions have an important impact on consumer behaviour (e.g., Bagozzi, Gopinath, & Nyer, 1999). For instance, it has been argued that more hours of daylight and sunshine increase stock market returns by inducing positive mood and increasing the willingness to take risks (Hirshleifer & Shumway, 2003; Kamstra, Kramer, & Levi, 2003). However, moods and emotions often have unwanted effects on information processing and decision making (review by Pham, 2007), thus hindering goal attainment. Can consumers use implementation intentions to regulate unwanted affective influences? Plenty of research suggests an affirmative answer to this question (meta-analysis by Webb, Schweiger Gallo, Miles, Gollwitzer, & Sheeran, 2012) and we provide two examples relevant for consumer behaviour.

Webb, Sheeran, et al. (2012, Study 2) found that implementation intentions help regulate detrimental effects of negative mood and arousal on risk-taking. In one of their studies, participants were placed in an aroused (versus neutral) mood and subsequently made a series of risky betting decisions. For each decision, they were presented with red and blue boxes at varying ratios (from 9:1 to 1:9) and told that a token was hidden behind one of these boxes. Participants

could then bet money on the colour of the box with the token. In this task, dealing with risks in a sophisticated manner required sensitivity to the relative risk associated with a betting decision (e.g., taking more risks when the ratio was 9:1 rather than 6:4). Participants with an implementation intention (“If I am asked to make a bet, then I will pay close attention to the number of red versus blue boxes!”) conformed to this reasoning and remained sensitive to relative risks even when put in an aroused mood. In contrast, participants with the mere goal intention to perform well made similar betting decisions independent of the box ratio, indicating that they paid little attention to relative risks.

Another example for unwanted affective influences on consumer behaviour is the feeling of doubt and worry which accompanies self-handicapping (Jones & Berglas, 1978). For instance, consumers may adopt low goals to avoid disappointment after failure (Cho & Johar, 2011) or refrain from buying goods they want because they might later regret the purchase (Bolton & Alba, 2012). To investigate whether implementation intentions can help regulate the doubts and worries that lead to self-handicapping, Thürmer, McCrea and Gollwitzer (2013) asked participants to take a test supposedly called CFIT and described it as a measure of either intelligence (highly threatening) or perception style (less threatening). When facing the highly threatening intelligence test rather than the perception style test, participants with the mere goal intention to perform well (“I want to achieve my maximum result in the CFIT!”) reported to be more stressed in their everyday life (claimed self-handicap: Study 1) and chronic self-handicappers even prepared less adequately for the test (behavioural self-handicap: Study 2). However, both effects were eliminated when participants formed an additional implementation intention (“And when I start with Part 2 of the study, then I will ignore my worries and tell myself: I can do it!”). Together with the study by Webb, Sheeran, et al. (2012), these findings suggest that implementation intentions can aid consumers in regulating undesired effects of moods and emotions on behaviour.

The mood and emotion effects outlined above are instances of incidental affect, that is, affect that is generated by the situation that then informs peoples’ stimulus-relevant responses. It is also important to consider *integral affect*, or the affect engendered by the stimulus (consumer product) itself, as optimal consumer decisions can be derailed not only by current moods and emotions, but also by overweighing feelings about a product at the expense of thoughts about the product’s utility (pros vs. cons). Sheeran, Webb and Gollwitzer (2016) investigated whether implementation intentions could help people to override their positive feelings towards a target behaviour and make a decision that was more in line with their thinking. UK students indicated their thoughts and feelings about getting drunk. In general, participants thought that drunkenness was a bad idea (negative thoughts) but rather enjoyable (positive feelings). One-half of the sample formed an implementation intention to help them manage their positive affect towards drunkenness (i.e., “If I have the urge to get drunk, then I instantly ignore that feeling and tell myself ‘I can get drunk another night!’”). Findings showed that control participants had decided to get drunk 25 per cent more often over the subsequent week compared to implementation intention participants. Moreover, whereas feelings about drunkenness predicted decisions for control participants, feelings were no longer influential when an if-then plan had been formed. For implementation intention participants, only their thoughts about drunkenness predicted the decisions they had made.

Social norms

Many consumers who enter a shop with a specific purchase in mind make additional, unplanned purchases (impulse shopping) (Kollat & Willett, 1967; Rook, 1987). Impulse shopping is a

widespread behaviour that elicits shame and guilt as a psychological consequence beyond the financial problems created by excess spending (Yi & Baumgartner, 2011). Many consumers have difficulties gaining control over their shopping impulses (Verplanken & Sato, 2011; Vohs & Faber, 2007); a problem that is amplified when shopping in groups due to the activation of indulgence norms (Luo, 2005; Mangleburg, Doney, & Bristol, 2004). Can consumers shield their shopping preferences from these undesired social norms by using implementation intentions? To answer this question, Thürmer, Wieber and Gollwitzer (2016, Study 2) established social norms by asking participants to read vignettes describing activities that are common in interactions with friends from home (indulgence norm) or student peers (frugality norm). Afterwards, they were asked to participate in a consumption study requiring them to shop for food items to cook a meal for either friends or peers. In preparation for this task, some participants received implementation intention instructions ("If we want to put something in our shopping cart, then we will take only what we really need!"), whereas others received control plan instructions without the if-then link ("We will only put things in our shopping cart that we really need!") or plans lacking a helpful strategy ("If we want something that we really need, then we will put it in our shopping cart!"). In line with prior research (Luo, 2005), participants selected more products that were not necessary for preparing the meal when shopping for their friends from home rather than student peers, indicating greater impulse shopping due to a stronger indulgence norm. However, implementation intentions significantly reduced this norm effect, especially when using the if-then format. Thus, implementation intentions protected consumers from acting in line with an activated social indulgence norm.

Priming

It has been suggested that consumer behaviour is influenced by priming, the conscious or non-conscious activation of an action-related construct or goal (e.g., Bargh, 2002; Dijksterhuis, Smith, Baaren, & Wigboldus, 2005). As an instance of goal priming, consumers who were primed with prestige versus thrift goals became more likely to subsequently purchase expensive goods (Chartrand, Huber, Shiv, & Tanner, 2008). Beyond creating preference change, however, priming may also negatively affect consumer well-being. For example, cute product primes foster indulgent consumer behaviour (Nenkov & Scott, 2014) and social primes manage to activate alcohol consumption (Sheeran, Aarts, et al., 2005). It is difficult to control these priming effects on behaviour because people are commonly not aware of them (Oettingen, Grant, Smith, Skinner, & Gollwitzer, 2006; Wilson & Brekke, 1994).

Implementation intentions have recently been shown to provide strategic control of priming effects (Gollwitzer, Sheeran, Trötschel, & Webb, 2011; Webb, Sheeran, & Gollwitzer, 2012). For instance, one study tested whether implementation intentions can be used to control the effects of social goal primes on the readiness to drink alcohol. Participants were told that they would work on a verb identification task as part of a language study. Prior to this task, they were asked to answer two ostensibly unrelated questionnaires. The first questionnaire manipulated the kind of implementation intention; half of the participants formed an implementation intention to prevent excessive drinking (related condition), whereas the remaining half formed an implementation intention geared at preventing excessive snacking (unrelated condition). The implementation intentions were formed by completing the sentence "As soon as I think about drinking [eating snack food], then I will ignore these thoughts and tell myself to..." The second questionnaire was introduced as a survey of students' university life. The goal prime was manipulated by asking questions that were either related to socializing (social goal prime) or studying behaviour (academic goal prime). In the subsequent verb identification task,

participants were instructed to judge as fast and as accurately as possible whether a string of letters was a verb or not. In some trials the verb *drinking* was presented, and response times in these trials were averaged into a measure of the readiness to drink. Results showed a greater readiness to drink (as indexed by shorter response times to the word drinking) for the social compared to the academic goal prime. However, this priming effect emerged only when participants formed an unrelated implementation intention, and was absent when participants had formed an implementation intention to ignore drinking-related thoughts. These findings suggest that people can ward off unwanted priming effects by using implementation intentions.

Mimicry

Another powerful external influence on consumer behaviour is mimicry, the automatic imitation of behaviours (Chartrand & Bargh, 1999). Being mimicked can bias consumer decisions by increasing persuasiveness and rapport. For instance, restaurant guests give larger tips when being mimicked by the service person (van Baaren, Holland, Steenaert, & van Knippenberg, 2003), and customers are more likely to comply with the suggestions of a mimicking salesperson (Jacob, Guéguen, Martin, & Boulbry, 2011). Similarly, the success of launching new (and potentially superior) products may not only depend on objective criteria like functionality and price but also on mimicry effects on liking (Tanner, Ferraro, Chartrand, Bettman, & Van Baaren, 2014). As these examples suggest, the effects of mimicry on choice may not represent consumers' actual preferences. Hence, a strategy to control mimicry effects on consumer behaviour could help to better align consumer preferences and behaviour.

In a recent study, Wieber, Gollwitzer and Sheeran (2014, Study 2) tested whether implementation intentions can be used to regulate the automatic effects of being mimicked on the decision to spend money. In their study, participants were first instructed to adopt the goal of being thrifty ("I want to be thrifty with my money!"). One-half of the participants then added a control strategy ("I will save my money for important investments!"), whereas the remaining half added an implementation intention ("And if I am tempted to buy something, then I will tell myself: I will save my money for important investments!"). In a subsequent, allegedly unrelated interview about students' satisfaction, participants were either mimicked by the experimenter (i.e., imitation of body postures) or not. At the end of the interview, the experimenter asked for a favour: to exchange their monetary compensation for left over coffee vouchers and chocolate bars (thereby challenging participants' thriftiness goal by providing the chance to spend money on food items). It was found that participants with the control strategy spent more money when being mimicked by the interviewer than when not being mimicked. In contrast, implementation intention participants always spent only a small fraction of their money irrespective of the mimicry manipulation. Apparently, implementation intentions could regulate the biasing effects of mimicry on consumer behaviour.

The cross-cultural generalizability of implementation intentions

An implementation intention is a simple conditional statement using an if-then format, specifying that *if* a certain condition is met, *then* it will be followed by a consequence. If-then conditionals are considered to be an integral constituent of human cognition and thinking (J.R. Anderson, 1983; Johnson-Laird & Byrne, 2002; Stalnaker, 1981), and rank among those linguistic universals that appear consistently across all languages (Greenberg, 1963). Indeed, children as young as two-years old (Scholnick & Wing, 1991, 1992) and even apes (Premack & Premack, 1972) are able to grasp the concept of if-then conditionals. What renders forming

implementation intentions a distinct self-regulation strategy simply pertains to the content used in the if-then conditional statement: The if-part specifies an opportune situation for attaining a goal, while the then-part specifies an instrumental, goal-directed behaviour. Thus, forming an implementation intention exploits a fundamental and natural way of how humans across cultures represent conditional information in their cognition and language in order to facilitate goal attainment. This simplicity is an appealing feature of implementation intentions for consumers because it renders them independent of cultural differences. However, the fact that the formation of implementation intentions is generalizable across cultures does not imply that the effects of forming them are generalizable as well; instead, there are multiple ways of how cultural differences might influence implementation intention effects and we shall present one example for illustration.

At the outset of our chapter, we have described a couple of variables that moderate the effectiveness of implementation intentions. Any systematic cultural difference in these moderating variables should in turn also influence the effects of implementation intentions. For instance, recall the observation that concrete mindsets facilitate the effectiveness of implementation intentions, whereas abstract mindsets enhance the flexibility to switch to non-planned means to attain a goal (Bayuk et al., 2010; Wieber et al., 2014). Are there systematic cultural differences with regard to whether people chronically adopt concrete versus abstract mindsets? A large body of research indicates that this is indeed the case: People from Eastern cultures adopt more direct and concrete modes of thought than Westerners (e.g., Choi, Dalal, Kim-Prieto, & Park, 2003; Nisbett, Peng, Choi, & Norenzayan, 2001). This fact is also reflected in the stronger use of verbs over adjectives in Eastern compared to Western languages, which allows comparatively more concrete and action-focused expressions in Eastern cultures (Maass, Karasawa, Politi, & Suga, 2006).

Chronic cultural differences in the reliance on concrete versus abstract mindsets will likely have consequences for implementation intention effects. For instance, it seems conceivable that the more concrete mindsets adopted by Easterners enhance the effectiveness of implementation intentions, whereas the more abstract mindsets held by Westerners should facilitate the flexibility in switching to alternative non-planned means. To date, research on such cultural effects regarding implementation intentions has not yet been conducted. However, it should be noted that cultural differences – such as those pertaining to mindsets – can be subject to situational influences and thus highly malleable (e.g., Oettingen, Sevincer, & Gollwitzer, 2008; Oyserman, 2011). For instance, participants in the Wieber et al. (2014) study could adopt a concrete versus an abstract mindset by merely asking how and why questions, respectively. In sum, we consider implementation intentions to be a self-regulation strategy that is fairly generalizable across cultures, and where cultural differences pertain to moderators of implementation intentions, we expect them to influence the effectiveness of implementation intentions.

Future directions

What is the optimal format of implementation intentions?

In the studies described so far implementation intentions were presented in a verbal if-then format. Is that format optimal or can the effects be augmented by additionally visualizing the situational cue and the response specified in the if-then plan? From laboratory tasks with rather abstract stimuli and tasks it is known that verbal, visual and combined verbal-visual implementation intention formats are equally effective (e.g., Burkard, Rochat, & Van der Linden, 2013; McFarland & Glisky, 2012; Meeks & Marsh, 2010). However, in everyday life settings using

richer stimuli (e.g., food products) implementation intentions effects can indeed be augmented by visualizing the plan contents (e.g., Knäuper et al., 2011; Knäuper, Roseman, Johnson, & Krantz, 2009). For instance, Knäuper et al. (2011) investigated the effectiveness of implementation intentions in increasing fruit consumption. After asking participants to form standard verbal implementation intentions, the authors encouraged them to visualize the critical cues (e.g., seeing fruits at the cafeteria) and the cue-response links (e.g., taking and eating fruits when they are encountered). This verbal-visual implementation intention induction was observed to be more effective in increasing fruit consumption than the standard verbal implementation intention, indicating that consumers benefit from visualizing cues and responses in addition to formulating an if-then plan.

Granted that visualizing plan contents enhances the effectiveness of implementation intentions, one might wonder whether the visualization of cues and responses may already lead to the formation of if-then plans. Fennis, Adriaanse, Stroebe and Pol (2011) examined this question by presenting participants with a webpage advocating the usage of a pocket-guide listing fair-trade products to facilitate sustainable consumption. Importantly, the webpage described different situational cues (e.g., writing a shopping list, putting products in the shopping basket) and also provided an instrumental means (i.e., using the pocket-guide to check whether a product is fair-trade) without ever providing a verbal if-then plan. Nevertheless, the authors observed that a vivid description of the plan contents strengthened the accessibility of situational and response cues (e.g., “shopping list”, “checking”) and resulted in more actual purchases of sustainable products. These results are promising because they indicate that implementation intentions can be conveyed to consumers even when an explicit instruction to form if-then plans is impracticable.

Mentally contrasting wishes and obstacles

Forming implementation intentions has mainly been studied as a self-regulation strategy that is given to people in a paternalistic manner. Recently, a self-regulation strategy called *mental contrasting with implementation intentions* (MCII) (e.g., Oettingen, 2012, 2014) has been designed to allow people to personalize the content of the if- and then-parts of their implementation intentions. In mental contrasting, people are first encouraged to elaborate on their wishes and imagine the most desired outcomes of their fulfilment. Then they are asked to contrast these outcomes with the personal obstacles that stand in the way of achieving these outcomes. Mentally contrasting desired outcomes versus real-world obstacles creates a propensity to plan and enables a person to identify powerful, idiosyncratic barriers to wish fulfilment. Once these obstacles are identified, the person is ready to form if-then plans that link the presence of the obstacles to instrumental responses that are helpful in overcoming those obstacles (e.g., “If I encounter [my obstacle], then I will [my response to effectively manage the obstacle]!”).

Mental contrasting has been found to benefit the effects of implementation intentions (e.g., Adriaanse et al., 2010; Kirk, Oettingen, & Gollwitzer, 2013). For example, MCII proved more effective in helping college students to break snacking habits than forming implementation intentions on their own. Importantly, mental contrasting increased perceived clarity about the personal obstacles involved in reducing unhealthy snacking. When Adriaanse, de Ridder and de Wit (2009) compared the effectiveness of if-then plans that were personalized vs. kept general (i.e., specifically referred to each participant’s unique action control problem vs. a general action control problem), the personalized if-then plans turned out to be more effective. Information about MCII and how it can be applied is freely available at woopmylife.org (WOOP stands for the MCII components: Wish, Outcome, Obstacle and Plan).

Conclusion

In the present chapter, we have discussed implementation intentions as a self-regulatory tool that can be used to enhance consumer behaviour. Moderating and mediating processes that facilitate the effectiveness of implementation intentions were outlined, and implementation intentions were demonstrated to enhance the three central aspects of consumer behaviour: information acquisition, information elaboration during the decision process and the control of internal and external influences on behaviour. These beneficial effects of implementation intentions can enable consumers to improve their rates of goal attainment, and are known to be especially effective when people experience difficulties in achieving their goals (Gollwitzer & Sheeran, 2006). Moreover, evolving research on the personalization and optimization of implementation intentions using MCII and visualization suggests that implementation intentions can be conveyed to consumers in an easy and individually tailored manner.

Acknowledgements

The contributions of Peter M. Gollwitzer and Maik Bieleke were supported by the German Research Foundation (DFG) through research unit FOR 1882 Psychoeconomics.

References

- Aarts, H., Dijksterhuis, A., & Midden, C. (1999). To plan or not to plan? Goal achievement or interrupting the performance of mundane behaviours. *European Journal of Social Psychology*, 29, 971–980.
- Achtziger, A., Bayer, U. C., & Gollwitzer, P. M. (2012). Committing to implementation intentions: Attention and memory effects for selected situational cues. *Motivation and Emotion*, 36, 287–300. doi: 10.1007/s11031-011-9261-6
- Adriaanse, M. A., de Ridder, D. T. D., & de Wit, J. B. F. (2009). Finding the critical cue: Implementation intentions to change one's diet work best when tailored to personally relevant reasons for unhealthy eating. *Personality & Social Psychology Bulletin*, 35, 60–71. doi: 10.1177/0146167208325612
- Adriaanse, M. A., Oettingen, G., Gollwitzer, P. M., Hennes, E. P., De Ridder, D. T. D., & De Wit, J. B. F. (2010). When planning is not enough: Fighting unhealthy snacking habits by mental contrasting with implementation intentions (MCII). *European Journal of Social Psychology*, 40, 1277–1293. doi: 10.1002/ejsp
- Adriaanse, M. A., Vinkers, C. D. W., De Ridder, D. T. D., Hox, J. J., & De Wit, J. B. F. (2011). Do implementation intentions help to eat a healthy diet? A systematic review and meta-analysis of the empirical evidence. *Appetite*, 56, 183–193. doi: 10.1016/j.appet.2010.10.012
- Anderson, J. R. (1983). A spreading activation theory of memory. *Journal of Verbal Learning and Verbal Behaviour*, 22, 261–295. doi: 10.1016/S0022-5371(83)90201-3
- Anderson, S. P., & de Palma, A. (2013). Shouting to be heard in advertising. *Management Science*, 59, 1545–1556. doi: 10.1287/mnsc.1120.1682
- Arkes, H. R., & Blumer, C. (1985). The psychology of sunk cost. *Organizational Behaviour and Human Decision Processes*, 35, 124–140.
- Åsterbro, T., Jeffrey, S. A., & Adomdza, G. K. (2007). Inventor perseverance after being told to quit: The role of cognitive biases. *Journal of Behavioural Decision Making*, 272, 253–272. doi: 10.1002/bdm.554
- Babin, B. J., Boles, J. S., & Darden, W. R. (1995). Salesperson stereotypes, consumer emotions, and their impact on information processing. *Journal of the Academy of Marketing Science*, 23, 94–105.
- Bagozzi, R. P., Gopinath, M., & Nyer, P. U. (1999). The role of emotions in marketing. *Journal of the Academy of Marketing Science*, 27, 184–206. doi: 10.1177/0092070399272005
- Bargh, J. A. (2002). Losing consciousness: Automatic influences on consumer judgment, behaviour, and motivation. *Journal of Consumer Research*, 29, 280–285. doi: 10.1086/341577
- Bayer, U. C., Achtziger, A., Gollwitzer, P. M., & Moskowitz, G. B. (2009). Responding to subliminal cues: Do if-then plans facilitate action preparation and initiation without conscious intent? *Social Cognition*, 27, 183–201.

- Bayuk, J. B., Janiszewski, C., & LeBoeuf, R. A. (2010). Letting good opportunities pass us by: Examining the role of mindset during goal pursuit. *Journal of Consumer Research*, 37, 570–583. doi: 10.1086/654892
- Bazerman, M. H. (2001). Consumer research for consumers. *Journal of Consumer Research*, 27, 499–504. doi: 10.1086/319624
- Bazerman, M. H., Beekun, R. I., & Schoorman, F. D. (1982). Performance evaluation in a dynamic context: A laboratory study of the impact of a prior commitment to the ratee. *Journal of Applied Psychology*, 67, 873–876. doi: 10.1037//0021-9010.67.6.873
- Bélanger-Gravel, A., Godin, G., & Amireault, S. (2013). A meta-analytic review of the effect of implementation intentions on physical activity. *Health Psychology Review*, 7, 23–54. doi: 10.1080/17437199.2011.560095
- Bettman, J. R. (1979). *An information processing theory of consumer choice*. Reading, MA: Addison-Wesley.
- Bieleke, M., Dambacher, M., Hübner, R., & Gollwitzer, P. M. (2016, Study 3). *If-then planning enhances selective attention: A diffusion model approach*. Manuscript in preparation.
- Blackwell, R. D., Miniard, P. W., & Engel, J. F. (2006). *Consumer behaviour*. Mason, OH: Thomson/South-Western.
- Bodenhausen, G. V., Sheppard, L. A., & Kramer, G. P. (1994). Negative affect and social judgment: The differential impact of anger and sadness. *European Journal of Social Psychology*, 24, 45–62. doi: 10.1002/ejsp.2420240104
- Bolton, L. E., & Alba, J. W. (2012). When less is more: Consumer aversion to unused utility. *Journal of Consumer Psychology*, 22, 369–383. doi: 10.1016/j.jcps.2011.09.002
- Brandstätter, V., Lengfelder, A., & Gollwitzer, P. M. (2001). Implementation intentions and efficient action initiation. *Journal of Personality and Social Psychology*, 81, 946–960. doi: 10.1037//0022-3514.81.5.946
- Burkard, C., Rochat, L., & Van der Linden, M. (2013). Enhancing inhibition: How impulsivity and emotional activation interact with different implementation intentions. *Acta Psychologica*, 144, 291–297. doi: 10.1016/j.actpsy.2013.07.008
- Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: The perception-behaviour link and social interaction. *Journal of Personality and Social Psychology*, 76, 893–910. doi: 10.1037//0022-3514.76.6.893
- Chartrand, T. L., Huber, J., Shiv, B., & Tanner, R. J. (2008). Nonconscious goals and consumer choice. *Journal of Consumer Research*, 35, 189–201. doi: 10.1086/588685
- Cho, C. K., & Johar, G. V. (2011). Attaining satisfaction. *Journal of Consumer Research*, 38, 622–631. doi: 10.1086/660115
- Choi, I., Dalal, R., Kim-Prieto, C., & Park, H. (2003). Culture and judgment of causal relevance. *Journal of Personality and Social Psychology*, 84, 46–59. doi: 10.1037/0022-3514.84.1.46
- Dalton, A. N., & Spiller, S. A. (2012). Too much of a good thing: The benefits of implementation intentions depend on the number of goals. *Journal of Consumer Research*, 39, 600–614. doi: 10.1086/664500
- Dijksterhuis, A., Smith, P. K., Baaren, R. B. Van, & Wigboldus, D. H. J. (2005). The unconscious consumer: Effects of environment on consumer behaviour. *Journal of Consumer Psychology*, 15, 193–202. doi: 10.1207/s15327663jcp1503_3
- Fennis, B. M., Adriaanse, M. A., Stroebe, W., & Pol, B. (2011). Bridging the intention-behaviour gap: Inducing implementation intentions through persuasive appeals. *Journal of Consumer Psychology*, 21, 302–311. doi: 10.1016/j.jcps.2010.12.003
- Gilbert, S. J., Gollwitzer, P. M., Cohen, A.-L., Oettingen, G., & Burgess, P. W. (2009). Separable brain systems supporting cued versus self-initiated realization of delayed intentions. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 35, 905–915. doi: 10.1037/a0015535
- Gollwitzer, P. M. (1993). Goal achievement: The role of intentions. *European Review of Social Psychology*, 4, 141–185.
- Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54, 493–503.
- Gollwitzer, P. M. (2014). Weakness of the will: Is a quick fix possible? *Motivation and Emotion*, 38, 305–322. doi: 10.1007/s11031-014-9416-3
- Gollwitzer, P. M., & Brandstätter, V. (1997). Implementation intentions and effective goal pursuit. *Journal of Personality and Social Psychology*, 73, 186–199.
- Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology*, 38, 69–119.
- Gollwitzer, P. M., Sheeran, P., Trötschel, R., & Webb, T. L. (2011). Self-regulation of priming effects on behaviour. *Psychological Science*, 22, 901–907. doi: 10.1177/0956797611411586

- Greenberg, J. H. (1963). Some universals of grammar with particular reference to the order of meaningful elements. In J. H. Greenberg (Ed.), *Universals of language* (pp. 73–113). Cambridge, MA: MIT Press.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4–27. doi: 10.1037//0033-295X.102.1.4
- Hagger, M. S., & Luszczynska, A. (2014). Implementation intention and action planning interventions in health contexts: State of the research and proposals for the way forward. *Applied Psychology: Health and Well-Being*, 6, 1–47. doi: 10.1111/aphw.12017
- Henderson, M. D., Gollwitzer, P. M., & Oettingen, G. (2007). Implementation intentions and disengagement from a failing course of action. *Journal of Behavioural Decision Making*, 102, 81–102. doi: 10.1002/bdm.553
- Hirshleifer, D., & Shumway, T. (2003). Good day sunshine: Stock returns and the weather. *Journal of Finance*, 58, 1009–1032.
- Holland, R. W., Aarts, H., & Langendam, D. (2006). Breaking and creating habits on the working floor: A field-experiment on the power of implementation intentions. *Journal of Experimental Social Psychology*, 42, 776–783. doi: 10.1016/j.jesp.2005.11.006
- Howard, J. A., & Sheth, J. N. (1969). *The theory of buyer behaviour*. New York, NY: Wiley & Sons.
- Hübner, R., Steinhauser, M., & Lehle, C. (2010). A dual-stage two-phase model of selective attention. *Psychological Review*, 117, 759–84. doi: 10.1037/a0019471
- Hutchinson, J. W., & Alba, J. W. (1991). Ignoring irrelevant information: Situational determinants of consumer learning. *Journal of Consumer Research*, 18, 325–345.
- Jacob, C., Guéguen, N., Martin, A., & Boulbry, G. (2011). Retail salespeople's mimicry of customers: Effects on consumer behaviour. *Journal of Retailing and Consumer Services*, 18, 381–388. doi: 10.1016/j.jretconser.2010.11.006
- Jacoby, J., Chestnut, R. W., & Silberman, W. (1977). Consumer use and comprehension of nutrition information. *Journal of Consumer Research*, 4, 119–128.
- Janczyk, M., Dambacher, M., Bieleke, M., & Gollwitzer, P. M. (2015). The benefit of no choice: Goal-directed plans enhance perceptual processing. *Psychological Research*, 79, 206–220. doi: 10.1007/s00426-014-0549-5
- Johnson-Laird, P. N., & Byrne, R. M. J. (2002). Conditionals?: A theory of meaning, pragmatics, and inference. *Psychological Review*, 109, 646–678. doi: 10.1037//0033-295X.109.4.646
- Jones, E. E., & Berglas, S. (1978). Control of attributions about the self through self-handicapping strategies: The appeal of alcohol and the role of underachievement. *Personality and Social Psychology Bulletin*, 4, 200–206.
- Kamstra, M. J., Kramer, L. A., & Levi, M. D. (2003). Winter blues: A SAD stock market cycle. *American Economic Review*, 93, 324–343.
- Keltner, D., Ellsworth, P. C., & Edwards, K. (1993). Beyond simple pessimism: Effects of sadness and anger on social perception. *Journal of Personality and Social Psychology*, 64, 740–752. doi: 10.1037/0022-3514.64.5.740
- Kirk, D., Oettingen, G., & Gollwitzer, P. M. (2013). Promoting integrative bargaining: Mental contrasting with implementation intentions. *International Journal of Conflict Management*, 24, 148–165. doi: 10.1108/10444061311316771
- Knäuper, B., Roseman, M., Johnson, P. J., & Krantz, L. H. (2009). Using mental imagery to enhance the effectiveness of implementation intentions. *Current Psychology*, 28, 181–186. doi: 10.1007/s12144-009-9055-0
- Knäuper, B., McCollam, A., Rosen-Brown, A., Lacaille, J., Kelso, E., & Roseman, M. (2011). Fruitful plans: Adding targeted mental imagery to implementation intentions increases fruit consumption. *Psychology & Health*, 26, 601–617. doi: 10.1080/08870441003703218
- Koestner, R., Horberg, E. J., Gaudreau, P., Powers, T., Di Dio, P., Bryan, C., Jochum, R., & Salter, N. (2006). Bolstering implementation plans for the long haul: The benefits of simultaneously boosting self-concordance or self-efficacy. *Personality & Social Psychology Bulletin*, 32, 1547–1558. doi: 10.1177/0146167206291782
- Kollat, D. T., & Willett, R. P. (1967). Customer impulse purchasing behaviour. *Journal of Marketing Research*, 4, 21–31.
- Kruglanski, A. W., Shah, J. Y., Fishbach, A., Friedman, R., Chun, W. Y., & Sleeth-Keppler, D. (2002). A theory of goal systems. *Advances in Experimental Social Psychology*, 34, 331–378.
- Lee, K., Kim, H., & Vohs, K. D. (2011). Stereotype threat in the marketplace: Consumer anxiety and purchase intentions. *Journal of Consumer Research*, 38, 343–357. doi: 10.1086/659315

- Lengfelder, A., & Gollwitzer, P. M. (2001). Reflective and reflexive action control in patients with frontal brain lesions. *Neuropsychology*, 15, 80–100. doi: 10.1037/0894-4105.15.1.80
- Liu, S. S., & Johnson, K. F. (2005). The automatic country-of-origin effects on brand judgments. *Journal of Advertising*, 34, 87–97. doi: 10.1080/00913367.2005.10639183
- Luo, X. (2005). How does shopping with others influence impulsive purchasing? *Journal of Consumer Psychology*, 15, 288–294. doi: 10.1207/s15327663jcp1504_3
- Maass, A., Karasawa, M., Politi, F., & Suga, S. (2006). Do verbs and adjectives play different roles in different cultures? A cross-linguistic analysis of person representation. *Journal of Personality and Social Psychology*, 90, 734–750. doi: 10.1037/0022-3514.90.5.734
- Maglio, S. J., Gollwitzer, P. M., & Oettingen, G. (2014). Emotion and control in the planning of goals. *Motivation and Emotion*, 38, 620–634. doi: 10.1007/s11031-014-9407-4
- Maison, D., Greenwald, A. G., & Bruin, R. H. (2004). Predictive validity of the implicit association test in studies of brands, consumer attitudes, and behaviour. *Journal of Consumer Psychology*, 14, 405–415. doi: 10.1207/s15327663jcp1404_9
- Mangleburg, T. F., Doney, P. M., & Bristol, T. (2004). Shopping with friends and teens' susceptibility to peer influence. *Journal of Retailing*, 80, 101–116. doi: 10.1016/j.jretai.2004.04.005
- McFarland, C., & Glisky, E. (2012). Implementation intentions and imagery: Individual and combined effects on prospective memory among young adults. *Memory & Cognition*, 40, 62–69. doi: 10.3758/s13421-011-0126-8
- Meeks, J. T., & Marsh, R. L. (2010). Implementation intentions about nonfocal event-based prospective memory tasks. *Psychological Research*, 74, 82–89. doi: 10.1007/s00426-008-0223-x
- Mendoza, S. A., Gollwitzer, P. M., & Amodio, D. M. (2010). Reducing the expression of implicit stereotypes: Reflexive control through implementation intentions. *Personality & Social Psychology Bulletin*, 36, 512–23. doi: 10.1177/0146167210362789
- Meyvis, T., & Janiszewski, C. (2002). Consumers' beliefs about product benefits: The effect of obviously irrelevant product information. *Journal of Consumer Research*, 28, 618–635. doi: 10.1086/338205
- Nenkov, G. Y., & Scott, M. L. (2014). "So cute I could eat it up": Priming effects of cute products on indulgent consumption. *Journal of Consumer Research*, 41, 326–341. doi: 10.1086/676581
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*, 108, 291–310. doi: 10.1037/0033-295X.108.2.291
- Oettingen, G. (2012). Future thought and behaviour change. *European Review of Social Psychology*, 23, 1–63. doi: 10.1080/10463283.2011.643698
- Oettingen, G. (2014). *Rethinking positive thinking: Inside the new science of motivation*. New York, NY: Penguin.
- Oettingen, G., Sevincer, A. T., & Gollwitzer, P. M. (2008). Goal pursuit in the context of culture. In R. Sorrentino & S. Yamaguchi (Eds.), *The handbook of motivation and cognition across cultures* (pp. 191–211). San Diego, CA: Elsevier/Academic Press.
- Oettingen, G., Grant, H., Smith, P. K., Skinner, M., & Gollwitzer, P. M. (2006). Nonconscious goal pursuit: Acting in an explanatory vacuum. *Journal of Experimental Social Psychology*, 42, 668–675. doi: 10.1016/j.jesp.2005.10.003
- Orbell, S., Hodgkins, S., & Sheeran, P. (1997). Implementation intentions and the theory of planned behaviour. *Personality & Social Psychology Bulletin*, 23, 945–954. doi: 10.1177/0146167297239004
- Orbell, S., & Sheeran, P. (2000). Motivational and volitional processes in action initiation: A field study of the role of implementation intentions. *Journal of Applied Social Psychology*, 30, 780–797. doi: 10.1111/j.1559-1816.2000.tb02823.x
- Oyserman, D. (2011). Culture as situated cognition: Cultural mindsets, cultural fluency, and meaning making. *European Review of Social Psychology*, 22, 164–214. doi: 10.1080/10463283.2011.627187
- Parks-Stamm, E. J., Gollwitzer, P. M., & Oettingen, G. (2007). Action control by implementation intentions: Effective cue detection and efficient response initiation. *Social Cognition*, 25, 248–266.
- Pashler, H. (1994). Dual-task interference in simple tasks: Data and theory. *Psychological Bulletin*, 116, 220–244. doi: 10.1037//0033-2909.116.2.220
- Pham, M. T. (2007). Emotion and rationality: A critical review and interpretation of empirical evidence. *Review of General Psychology*, 11, 155–178. doi: 10.1037/1089-2680.11.2.155
- Pieters, R., Warlop, L., & Wedel, M. (2002). Breaking through the clutter: Benefits of advertisement originality and familiarity for brand attention and memory. *Management Science*, 48, 765–781. doi: 10.1287/mnsc.48.6.765.192
- Premack, A. J., & Premack, D. (1972). Teaching language to an ape. *Scientific American*, 227, 92–99. doi: 10.1038/scientificamerican1072-92

- Prestwich, A., & Kellar, I. (2014). How can the impact of implementation intentions as a behaviour change intervention be improved? *European Review of Applied Psychology*, 64, 35–41. doi: 10.1016/j.erap.2010.03.003
- Rook, D. W. (1987). The buying impulse. *Journal of Consumer Research*, 14, 189–199.
- Roth, S., Robbert, T., & Straus, L. (2015). On the sunk-cost effect in economic decision-making: A meta-analytic review. *Business Research*, 8, 99–138. doi: 10.1007/s40685-014-0014-8
- Rucker, D. D., & Petty, R. E. (2004). Emotion specificity and consumer behaviour: Anger, sadness, and preference for activity. *Motivation and Emotion*, 28, 3–21. doi: 10.1023/B:MOEM.0000027275.95071.82
- Scholnick, E. K., & Wing, C. S. (1991). Speaking deductively: Preschoolers' use of If in conversation and in conditional inference. *Developmental Psychology*, 27, 249–258. doi: 10.1037/0012-1649.27.2.249
- Scholnick, E. K., & Wing, C. S. (1992). Speaking deductively: Using conversation to trace the origins of conditional thought in children. *Merrill-Palmer Quarterly*, 38, 1–20.
- Sheeran, P., Webb, T. L., & Gollwitzer, P. M. (2005). The interplay between goal intentions and implementation intentions. *Personality & Social Psychology Bulletin*, 31, 87–98. doi: 10.1177/0146167204271308
- Sheeran, P., Webb, T. L., & Gollwitzer, P. M. (2016). *Guidance of behaviour by thoughts versus feelings: Situational and strategic determinants*. Manuscript under review.
- Sheeran, P., Aarts, H., Custers, R., Ravis, A., Webb, T. L., & Cooke, R. (2005). The goal-dependent automaticity of drinking habits. *British Journal of Social Psychology*, 44, 47–63. doi: 10.1348/014466604X23446
- Sleesman, D. J., Conlon, D. E., McNamara, G., & Miles, J. E. (2012). Cleaning up the big muddy: A meta-analytic review of the determinants of escalation of commitment. *Academy of Management Journal*, 55, 541–562. doi: 10.5465/amj.2010.0696
- Smith, C. A., & Ellsworth, P. C. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality and Social Psychology*, 48, 813–838. doi: 10.1037//0022-3514.48.4.813
- Stalnaker, R. C. (1981). A theory of conditionals. In W. L. Harper, R. Stalnaker & G. A. Pearce (Eds.), *Ifs: Conditionals, belief, decision, chance, and time* (pp. 41–55). Dordrecht, Netherlands: Reidel.
- Stasser, G., & Titus, W. (1985). Pooling of unshared information in group decision making: Biased information sampling during discussion. *Journal of Personality and Social Psychology*, 48, 1467–1478. doi: 10.1037//0022-3514.48.6.1467
- Staw, B. M. (1981). The escalation of commitment to a course of action. *Academy of Management Review*, 6, 577–587. doi: 10.1016/0749-5978(85)90049-4
- Tanner, R. J., Ferraro, R., Chartrand, T. L., Bettman, J. R., & Van Baaren, R. (2014). Of chameleons and consumption: The impact of mimicry on choice and preferences. *Journal of Consumer Research*, 34, 754–766.
- Tiedens, L. Z., & Linton, S. (2001). Judgment under emotional certainty and uncertainty: The effects of specific emotions on information processing. *Journal of Personality and Social Psychology*, 81, 973–988. doi: 10.1037/0022-3514.81.6.973
- Thürmer, J. L., McCrea, S. M., & Gollwitzer, P. M. (2013). Regulating self-defensiveness: If-then plans prevent claiming and creating performance handicaps. *Motivation and Emotion*, 37, 712–725. doi: 10.1007/s11031-013-9352-7
- Thürmer, J. L., Wieber, F., & Gollwitzer, P. M. (2015). A self-regulation perspective on hidden-profile problems: If-then planning to review information improves group decisions. *Journal of Behavioural Decision Making*, 28, 101–113. doi: 10.1002/bdm.1832
- Thürmer, J. L., Wieber, F., & Gollwitzer, P. M. (2016). *Why does observing peer habits increase impulse buying? Processes and Remedies*. Unpublished manuscript. University of Konstanz.
- Van Baaren, R. B., Holland, R. W., Steenaert, B., & van Knippenberg, A. (2003). Mimicry for money: Behavioural consequences of imitation. *Journal of Experimental Social Psychology*, 39, 393–398. doi: 10.1016/S0022-1031(03)00014-3
- Verhoeven, A. A. C., Adriaanse, M. A., Ridder, D. T. D. D. E., Vet, E. D. E., & Fennis, B. O. B. M. (2013). Less is more: The effect of multiple implementation intentions targeting unhealthy snacking habits. *European Journal of Social Psychology*, 43, 344–354. doi: 10.1002/ejsp.1963
- Verplanken, B., & Sato, A. (2011). The psychology of impulse buying: An integrative self-regulation approach. *Journal of Consumer Policy*, 34, 197–210. doi: 10.1007/s10603-011-9158-5
- Vohs, K. D., & Faber, R. J. (2007). Spent resources: Self-regulatory resource availability affects impulse buying. *Journal of Consumer Research*, 33, 537–547. doi: 10.1086/510228
- Webb, T. L., & Sheeran, P. (2006). Does changing behavioural intentions engender behaviour change? A meta-analysis of the experimental evidence. *Psychological Bulletin*, 132, 249–268. doi: 10.1037/0033-2909.132.2.249

- Webb, T. L., & Sheeran, P. (2007). How do implementation intentions promote goal attainment? A test of component processes. *Journal of Experimental Social Psychology*, 43, 295–302. doi: 10.1016/j.jesp.2006.02.001
- Webb, T. L., & Sheeran, P. (2008). Mechanisms of implementation intention effects: The role of goal intentions, self-efficacy, and accessibility of plan components. *The British Journal of Social Psychology*, 47, 373–395. doi: 10.1348/014466607X267010
- Webb, T. L., Sheeran, P., & Pepper, J. (2012). Gaining control over responses to implicit attitude tests: Implementation intentions engender fast responses on attitude-incongruent trials. *British Journal of Social Psychology*, 51, 13–32. doi: 10.1348/014466610X532192
- Webb, T. L., Sheeran, P., Gollwitzer, P. M., & Trötschel, R. (2012). Strategic control over the unhelpful effects of primed social categories and goals. *Zeitschrift für Psychologie*, 220, 187–193. doi: 10.1027/2151-2604/a000112
- Webb, T. L., Schweiger Gallo, I., Miles, E., Gollwitzer, P. M., & Sheeran, P. (2012). Effective regulation of affect: An action control perspective on emotion regulation. *European Review of Social Psychology*, 23, 143–186. doi: 10.1080/10463283.2012.718134
- Webb, T. L., Sheeran, P., Totterdell, P., Miles, E., Mansell, W., & Baker, S. (2012). Using implementation intentions to overcome the effect of mood on risky behaviour. *British Journal of Social Psychology*, 51, 330–45. doi: 10.1348/014466610X533623
- Wieber, F., & Sassenberg, K. (2006). I can't take my eyes off of it – Attention attraction effects of implementation intentions. *Social Cognition*, 24, 723–752.
- Wieber, F., Odenthal, G., & Gollwitzer, P. M. (2010). Self-efficacy feelings moderate implementation intention effects. *Self and Identity*, 9, 177–194. doi: 10.1080/15298860902860333
- Wieber, F., Sezer, L. A., & Gollwitzer, P. M. (2014). Asking “why” helps action control by goals but not plans. *Motivation and Emotion*, 38, 65–78. doi: 10.1007/s11031-013-9364-3
- Wieber, F., Gollwitzer, P. M., & Sheeran, P. (2014). Strategic regulation of mimicry effects by implementation intentions. *Journal of Experimental Social Psychology*, 53, 31–39. doi: 10.1016/j.jesp.2014.02.002
- Wieber, F., Thürmer, J. L., & Gollwitzer, P. M. (2015). Attenuating the escalation of commitment to a faltering project in decision-making groups: An implementation intention approach. *Social Psychological and Personality Science*, 6, 587–595. doi: 10.1177/1948550614568158
- Wilson, T. D., & Brekke, N. (1994). Mental contamination and mental correction: Unwanted influences on judgments and evaluations. *Psychological Bulletin*, 116, 117–142. doi: 10.1037/0033-2909.116.1.117
- Wood, W., & Neal, D. T. (2009). The habitual consumer. *Journal of Consumer Psychology*, 19, 579–592. doi: 10.1016/j.jcps.2009.08.003
- Yi, S., & Baumgartner, H. (2011). Coping with guilt and shame in the impulse buying context. *Journal of Economic Psychology*, 32, 458–467. doi: 10.1016/j.joep.2011.03.011