If-then plans help regulate automatic peer influence on impulse buying

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Abstract

Purpose – This study aims to take a dual-process perspective and argues that peer influence on increasing impulse buying may also operate automatically. If-then plans, which can automate action control, may, thus, help regulate peer influence. This research extends existing literature explicating the deliberate influence of social norms.

Design/methodology/approach – Study 1 (N = 120) obtained causal evidence that forming an implementation intention (i.e. an if-then plan designed to automate action control) reduces peer impact on impulse buying in a laboratory experiment with young adults (students) selecting food items. Study 2 (N = 686) obtained correlational evidence for the role of norms, automaticity and implementation intentions in impulse buying using a large sample of high-school adolescents working on a vignette about clothes-shopping.

Findings – If-then plans reduced impulse purchases in the laboratory (Study 1). Both reported deliberation on peer norms and the reported automaticity of shopping with peers predicted impulse buying but an implementation intention to be thriftily reduced these links (Study 2).

Research limitations/implications – This research highlights the role of automatic social processes in problematic consumer behaviour. Promising field studies and neuropsychological experiments are discussed.

Practical implications – Young consumers can gain control over automatic peer influence by using if-then plans, thereby reducing impulse buying.

Originality/value – This research helps understand new precursors of impulse buying in understudied European samples of young consumers.

Keywords Young consumers, Peer influence, Impulse buying, Implementation intentions, Automaticity, Reflective-impulsive model

Paper type Research paper

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1. Introduction

Impulse buying (i.e. *ad-hoc* purchases at the point of sale; Rook (1987), Stern (1962); reviews by Kalla and Arora (2011), Sharma *et al.* (2010) and Verplanken and Sato (2011) accounts for much of everyday consumption and this holds especially true for young people. According to a recent report (Thredup, 2019), US shoppers 18–24 years of age make almost half of their purchases (49%) on impulse with similar numbers observed in the UK (KPMG, 2016; Attest, 2018). At the same time, consumers accumulate worrisome amounts of debt at this young age (R3, 2019). For marketing research and consumers alike, it is, therefore, key to understand the drivers of impulse purchases among young consumers and to develop effective means to regulate impulse buying.

Adolescents are particularly sensitive to social cues (Foulkes and Blakemore, 2016) and are prone to avoid social risks (Blakemore, 2018), making them potentially vulnerable to the problematic influence of peers on impulse buying behaviour. In line with this reasoning, the presence of others of the same age and status (peers) increases impulse buying among young consumers (Luo, 2005; Rook and Fisher, 1995). Existing accounts of this phenomenon focus on social norms as follows: presumably, peers have favourable impulse buying norms that encourage giving in to temptations. Accordingly, shoppers exhibit increased levels of impulse buying behaviour in the presence of their peers (Luo, 2005). In other words, past research has assumed that giving in to peer influence is a deliberate decision.

The present research builds on and extends this literature by taking a dual-process perspective (Strack *et al.*, 2006). This research proposes that the presence of peers may not only affect impulse decisions by triggering deliberations based on norms but also via triggering automatic processes. The presence of peers may become strongly associated with impulse buying over time, and thus, manage to automatically trigger impulse buying. An implication of this assumption is that forming a strong goal to be thrifty might not be sufficient for blocking the automatic impact of peers on impulse buying. Young consumers, thus, need additional self-regulation strategies to help them curb the automatic influence of peers on impulse buying. One self-regulatory tool that qualifies for this purpose is forming if-then plans (implementation intentions; Gollwitzer, 2014, 1999; Thürmer *et al.*, 2015a; Wieber *et al.*, 2015b), as such plans have been shown to automate the execution of goal-directed responses (i.e. being thrifty) that can then outrun unwanted normative responses (i.e. impulse buying). Accordingly, the present paper explores whether if-then plans in the service of the set goal of being thrifty can indeed curb peer influence on impulse buying.

The current paper proceeds as follows: firstly, the literature on impulse buying is reviewed, with a focus on the features of the phenomenon and the development of the respective field of research. Secondly, the paper turns to peer influence on impulse buying by focussing on existing evidence before developing the argument that it might also be based on automatic processes. Thirdly, an effective means to control automatic peer influences are introduced: prospectively planning out the pursuit of one's set goals with implementation intentions, a self-regulatory tool that is capable of blocking unwanted automatic influences from affecting one's goal striving.

2. Literature review

2.1 Impulse buying: the phenomenon and established processes

Impulse buying has been a topic of growing interest for more than 50 years now (reviews and metaanalysis by Amos *et al.*, 2014; Muruganantham and Bhakat, 2013; Kalla and Arora, 2011). Early approaches, taking a marketing perspective, defined impulse buying as any unplanned purchase and accordingly focussed on specific product categories or product features (Stern, 1962) that may increase the likelihood of impulse buying. Research then

assumed the perspective of the consumer and investigated personal characteristics related to impulse buying, including demographics (Kollat and Willett, 1967) and personality (Rook, 1987). Afterwards research also incorporated subjective experiences into models of impulse buying (e.g. emotions; Weinberg and Gottwald, 1982), turning the field's attention to the personal experiences and emotions underlying impulse buying. Accordingly, Rook (1987, p. 191) suggested that "impulse buying occurs when a consumer experiences a sudden, often powerful and persistent urge to buy something immediately" (see also Piron, 1991). More recent research lends empirical support to this reasoning (Beatty and Ferrell, 1998). For instance, in experiments using eye-tracking, impulsive buyers were found to be highly distracted (Büttner *et al.*, 2014) and aroused by tempting products (Serfas *et al.*, 2014).

Based on the deeper understanding of such personal experiences, more and more research began to investigate the role of action control in impulse buying. For instance, Wood (1998) used a delay-of-gratification framework to analyse the relation between education and impulse buying, and Hoch and Loewenstein (1991) observed that impulse buying may lead to a loss of self-control, resulting in even more impulse buying. The latest research in this area has gone one step further by analysing the specific self-control processes involved in impulse buying (Verplanken and Sato, 2011). For instance, neuroscientific evidence suggests that attractive products may activate brain areas related to impulsive decisions, which are difficult to control wilfully (Hubert *et al.*, 2013).

Recent research moreover has identified social influence as a key driver of impulse buying (Chuang *et al.*, 2015). During adolescence, peers (i.e. others of the same age and status) become an important source of social influence (Erdley *et al.*, 2001) and it is, thus, not surprising that peers also impact consumer decisions (Childers and Rao, 1992; Chaplin and John, 2010), including whether to impulse buy or not (Mangleburg *et al.*, 2004; Luo, 2005). Especially young consumers who fear social rejection, and thus, avoid social risks (Blakemore, 2018) are prone to impulse buying (Lin and Chen, 2012), pointing to the social acceptance of impulse buying in this segment of consumers (Luo, 2005). In fact, among adolescents, the presence of peers seems to increase the perceived value of a reward (Foulkes and Blakemore, 2016). Accordingly, recent research shows that peer influence may even lead to chronically enhanced levels of impulse buying (Baker *et al.*, 2016). Even though most of this research was conducted in the USA with adult populations, some correlational evidence suggests that these findings may be extended to adolescent and/or European consumers (Lins *et al.*, 2015; Muratore, 2016). In sum, past research suggests that peers may increase impulse buying, especially among young adults and adolescents.

Regarding the processes underlying the immediate peer influence on purchase decisions, past research has focussed on the impact of peer norms. From this perspective, peers increase impulse buying (Mangleburg *et al.*, 2004; Luo, 2005) because of the activation of a peer-norm to indulge (Luo, 2005). Peers may, therefore, signal to a consumer that it is acceptable and desirable to impulse buy in the respective situation. Reflecting on this norm then leads consumers to set corresponding goals (Fishbein and Ajzen, 1975) that they pursue (Carver and Scheier, 1998; Thürmer *et al.*, 2019). For instance, the consumer may form the goal intention to follow his impulses and consequently will be willing to give in to tempting products in a shop.

2.2 The automatic influence of peers on impulse buying

The present research suggests that more automatic processes may also be involved in the peer impact on impulse buying. Consumer research has highlighted that the sudden urge to buy a product is a key process involved in impulse buying (Beatty and Ferrell, 1998; Rook, 1987; Piron, 1991) and it seems unlikely that such "hot" emotional processes are fully under

the control of deliberate goals and norms. In line with this claim, Strack and colleagues argue that consumer behaviour, in general, has reflective and automatic determinants (Strack *et al.*, 2006; see also MacInnis and Patrick, 2006; Verplanken and Sato, 2011). From this perspective, impulse buying may involve a deliberate process of giving in to welcome temptations but it may also occur when a consumer has the intention *not* to impulse buy (e.g. he/she wants to be thrifty).

The reflective-impulsive-model (RIM; Strack and Deutsch, 2004; Hofmann *et al.*, 2009) specifies how deliberate and automatic influences on behaviour interact and, therefore, is particularly useful for deriving hypotheses about the peer influence on impulse buying. The model assumes that two systems concurrently affect behaviour, an impulsive and a reflective one. The impulsive system rests on spreading activation in an associative network, which is quick and efficient but rather inflexible. In contrast, the reflective system relies on deliberate intentions, which is slow and resource-dependent but permits flexible behavioural control. These systems may be misaligned (e.g. a deliberate goal to be thrifty vs a sudden urge to impulse buy), thereby leading to self-control conflicts (Hofmann *et al.*, 2009). Because the impulsive system is swift and does not require many resources, it may "outrun" the reflective system in such conflict situations, leading to behaviour that runs counter to the goals of the reflective system. Effective self-control is, thus, required to prevent the fast and frugal impulsive system from overriding the reflective impact of deliberate goals. According to this self-control logic, peers may also lead a consumer to impulse buy in a more automatic fashion despite the best intentions to be thrifty: when peers are associated with impulse buying, they may activate the respective behaviour instantaneously, without requiring further deliberation. Because this impulsive process is fast and not necessarily conscious, it may outrun reflective processes based on the intention to be thrifty.

Recent consumer and motivation research supports the reasoning that social influences on impulse buying may also operate automatically, countering set goals. Serfas *et al.* (2016) asked participants to perform a simulated shopping task in a social context (i.e. decide whether products on a computer screen were on their shopping list for a dinner with friends). Eye-tracking data showed that tempting products attracted participants' attention, even when participants had the goal to focus on necessities only. Wieber *et al.* (2014, Study 2) moreover found that setting the goal to be thrifty was ineffective with respect to declining an invitation by the experimenter to purchase candy when the experimenter had established a social connection by imitating the participants (mimicry). Participants initially did not know about the opportunity to purchase tempting candy at the end of the experiment, thus creating an opportunity for impulse buying. More generally related to the control of automatic social influence, Gollwitzer *et al.* (2011, Study 2) found that goals were insufficient to control unwanted behaviour (i.e. following an inappropriate request for help) primed outside of people's awareness. Importantly, all of these studies measured participants' goal commitment to testing whether the undetected social influence led to changing their goals. None of these studies found such an effect, suggesting that goal intentions are not sufficient to regulate implicit social influences. Finally, adolescents and even young adults may face unique self-regulation challenges in the context of their peers (Oettingen and Gollwitzer, 2015), potentially further increasing impulsiveness in this population. The present research, therefore, suggests that, in addition to the deliberate normative influence of peers via the reflective route, peers may also promote impulse buying in an automatic fashion via the impulsive route and without requiring deliberation:

H1. Peers increase impulse buying even when young consumers have the goal to be thrifty.

2.3 Gaining control of automatic peer influence on impulse buying

The central question for young consumers then is how they can gain control over this automatic peer influence. One approach may be to change the context (e.g. avoid peers altogether; Duckworth *et al.*, 2016). However, given the central role that peers play in adolescents' lives (Smetana *et al.*, 2006), this is neither desirable nor feasible. Alternatively, consumers may use their reflective system to lessen the peer impact. A first step may be setting a goal (e.g. "I want to be thrifty!" and then exert sufficient self-control in the face of temptation. However, merely setting goals has a moderate impact on behaviour (Sheeran and Webb, 2016) that may not suffice to down-regulate strong consumer impulses (Hofmann *et al.*, 2009, 2008). In particular, impulsive determinants of behaviour are likely to outrun reflective determinants when cognitive capacity is limited, the brain area used for cognitive control is not very active (i.e. the lateral prefrontal cortex) or when one is under time pressure (Hofmann *et al.*, 2007; Friese *et al.*, 2008, 2006, 2016). All of these conditions may be present when shopping with peers and when tempting products are available and mere goals, therefore, should be insufficient to deal with the peer influence on impulse buying.

To increase the impact of goals, in a second step, a consumer may prospectively specify concrete actions in their goals (e.g. take only what one really needs). This should reduce the load of translating the goal (e.g. to be thrifty) into concrete actions and, therefore, help break the impulsive impact of peers. However, the reflective system still needs to initiate these behaviours in critical situations (e.g. when facing an attractive product) and the impulsive system may, therefore, still "outrun" this reflective effort (Hofmann *et al.*, 2009).

Therefore, in a third step, a consumer would ideally recruit the impulsive system to support the deliberative system. This alignment of both systems would then allow delegating the initiation of the concrete, goal-directed action to the "fast and frugal" impulsive system and thereby ensure the execution of the goal-directed action in the right moment (Martiny–Huenger *et al.*, 2016, 2011). This is exactly what furnishing one's goals with if-then plans (implementation intentions; Gollwitzer, 1993, 1999, 2014) does. An implementation intention spells out when, where and how to act on a set goal. For instance, a consumer with the goal to be thrifty may add the implementation intention: "and when I am in the supermarket, then I will only take items that are on my shopping list". Implementation intentions promote goal attainment (Gollwitzer and Sheeran, 2006), such as arriving at good decisions (Henderson *et al.*, 2007; Thürmer *et al.*, 2015b; Wieber *et al.*, 2015a), especially when phrased as an if-then conditional (i.e. "if I encounter situation S, then I will show the goal-directed response R"; Chapman *et al.*, 2009). The processes underlying the strong effects of these simple if-then plans include making the situation in the if-part (e.g. feeling the urge to buy something) easy to detect and creating a strong associative link between this situation and a goal-directed response in the then-part (e.g. take only items on the shopping list) (Webb and Sheeran, 2007; Wieber and Sassenberg, 2006; Martiny–Huenger *et al.*, 2017). This associative if-then link helps initiate the goal-directed response within milliseconds once the specified situation arises, even in critical populations (Brandstätter *et al.*, 2001; Webb *et al.*, 2010, review and metaanalysis by Toli *et al.*, 2016; Wieber *et al.*, 2015b; Kersten *et al.*, 2015). An if-then plan, thus, delegates action control to a cue in the environment and thereby strategically uses the impulsive system to reach set goals.

The beneficial effects of if-then planning have been demonstrated in a large range of populations and contexts (Gollwitzer and Sheeran, 2006) such as reducing fat consumption (Vilà *et al.*, 2017) and increasing exercise (Bélanger–Gravel *et al.*, 2013). Pertinent for the present research, beneficial effects of implementation intentions have been observed in consumer contexts, such as increasing fruit consumption (Knäuper *et al.*, 2011), reducing meat consumption (Rees *et al.*, 2018), choosing more sustainable modes of travel (Bamberg,

2000), recycling more (Holland *et al.*, 2006) or switching to an organic supermarket for grocery shopping (Bamberg, 2002). Implementation intention effects have also been observed among young adults, even when they were suffering from attention deficit and hyperactivity syndrome (ADHD), which is associated with increased impulsivity (Gawrilow *et al.*, 2011; Gawrilow and Gollwitzer, 2008; Paul *et al.*, 2007; Gawrilow *et al.*, 2013). Research, thus, suggests that implementation intentions may be an effective means for young adults to regulate automatic peer impact on impulse buying.

The impulse buying and priming studies discussed above (Wieber *et al.*, 2014, Study 2; Gollwitzer *et al.*, 2011, Study 2; Serfas *et al.*, 2016) are in line with this claim: forming additional implementation intentions helped participants curb unwanted social influences successfully. This paper, therefore, hypothesizes that implementation intentions help young consumers gain control over automatic peer influence on impulse buying:

H2. If- then plans reduce impulse purchases related to automatic peer influence when a goal to be thrifty is present.

2.4 The current research

This research investigates how peers promote impulse buying and whether if-then plans (implementation intentions) help curb this social influence. In Study 1, the role of implementation intentions and the presence of peers in impulse buying was established experimentally among young adults. To this end, the salience of either a peer group with strong impulse buying norms or a peer group with weaker respective norms was increased. Participants moreover formed one of three plans that included only the if-then format, only a helpful strategy or a helpful strategy in an if-then format (implementation intention). Participants then worked on an impulse buying supermarket task. Drawing on the reasoning that peer influence on impulse buying is automatic, it was predicted that wording the helpful strategy in an if-then format (which automates responding) would help reduce impulse buying further.

Study 2 sought to establish predictors of peer influence on impulse buying in adolescents, a particularly vulnerable consumer group. To this end, a large sample of high school-students was confronted with a hypothetical impulse buying situation; they then reported their peer norms and how automatically they shop with peers. Moreover, it was again examined whether implementation intentions to take only what one really needs would moderate the impact of norms and automaticity on impulse buying. It was expected that norms, as well as automaticity, would predict increased impulse buying and that implementation intentions would curb this social influence.

3. Study 1: the causal role of automatic peer influence and implementation intentions on impulse buying

The aims of Study 1 were twofold as follows: firstly, Study 1 sought to establish peer influence experimentally. Two pre-tests with students were conducted to identify peer groups that have weaker vs stronger indulgence norms. After making one of these identities salient, participants worked on a simulated grocery shopping task providing a familiar impulse buying situation (OnePoll, 2018). It was expected that the peer group with stronger indulgence norms would lead to more impulse buying.

The second aim of Study 1 was to establish the causal role of automatic peer influence and implementation intentions on impulse buying experimentally. The reasoning was as follows: Research shows that implementation intentions are particularly effective when using the if-then format (Chapman *et al.*, 2009) because this particular format creates a

strong associative situation-response link that leads to automated responding once the specified situation is encountered (Webb and Sheeran, 2007). If peer influence on impulse buying is based on automatic processes, as the current paper suggests, then it should best be controlled by a self-regulation strategy that is also based on fast automatic processes (i.e. a plan in the if-then format) and deliberate control by goals should be less effective. Study 1, therefore, systematically manipulated the format (if-then conditional vs control) and the content (helpful vs unrelated strategy) of the suggested strategy (plan) across three conditions (Table 1). It was expected that, in comparison to a useless strategy, specifying a helpful strategy should decrease impulse buying and that using an if-then format for the helpful strategy should automate action control, and thus, further decrease impulse buying.

3.1 Method

3.1.1 Participants and design. The experiment and the pretests were conducted at a university in southern Germany. Participants were randomly assigned to one of six conditions in a 2 (peer influence: strong vs weak) × 3 (implementation intention: if-then self-regulation strategy vs self-regulation strategy without if-then conditional vs if-then control without appropriate self-regulation strategy) between-subjects design. A power analysis using G*Power (Faul *et al.*, 2007) setting $1-\beta = .80$ and assuming an implementation intention effect of $d = 0.65$ (Gollwitzer and Sheeran, 2006) yielded a minimum sample size of 95. In total, 124 university students (34 female) with a mean age of 22.03 years ($SD = 4.02$) participated in return for €5 or course credit. Three participants did not complete the experiment and one indicated that she did not take the experiment seriously, leaving $N = 120$ participants (32 female) for statistical analyses. Exclusions were evenly distributed across conditions. (one peer from home/strategy control, two peers from home/if-then control and one college peers/implementation intention).

3.1.2 Pretesting. The first author conducted a focus group discussion with 15 second-year university students. Students agreed that their peers from home and their college peers are important to them, but that the former enjoy having a good time and to indulge (i.e. have an indulgence norm) and the latter is becoming somewhat more aware of their growing responsibilities and of the fact that they have to make ends meet (i.e. have a norm to be thrifty). The first author and the students developed vignettes containing typical activities and situations to make each group's norm salient, as well as a shopping task that was closely related to day-to-day purchases in this population. The vignettes and the task were tested in a second, quantitative pilot study ($N = 103$ students; 68 female; mean age = 22.10 years, $SD = 3.21$). Participants across conditions equally made intended purchases (home: $M = 3.16$, $SD = 1.08$, college: $M = 3.02$, $SD = 1.02$), $F(1, 101) = 0.47$, $p = .50$. However, in line with the assumption that peers from home have a stronger indulgence norm than

Condition and strategy wording	Strategy content: If-then format	Strategy content: Useful strategy
Implementation intention: "whenever we want to put something in our shopping cart, then we will take only what we really need"	✓	✓
Strategy-control: "we will only put things in our shopping cart that we really need"	–	✓
If-then-control: "whenever we want something that we really need, then we will put it in our shopping cart"	✓	–

Table 1. Systematic variation of the wording of the self-regulation strategy (plan) in Study 1

college peers, participants in the peers from home condition bought (non-significantly) more items impulsively, $M = 5.96$, $SD = 2.99$, than participants in the college peers condition, $M = 4.92$, $SD = 2.46$, $F(1, 101) = 3.71$, $p = .06$, part $\eta^2 = 0.04$.

3.1.3 Procedure. After giving informed consent, all participants learned that the study consisted of a first task exploring participants' imagery skills and a second, independent task on consumer behaviour. The two parts were presented as independent to ensure that the respective group context and not the specific peer situation described (see below) caused the observed effects.

In the first part, the peer influence was manipulated: participants either read a text describing typical coming-home activities (e.g. meeting at a friend's house to catch up) to make their peers from home salient or they read a text describing typical student activities (e.g. meeting at a fellow student's house to study and discuss exams) to make their college peers salient. All participants summarized the text, responded to three manipulation-check items (e.g. "it was easy to imagine being the person described in the text", 1: *not at all* – 5: *very much*, Cronbach's $\alpha = .77$) and were informed that they had completed Part 1.

Part 2 was introduced as a study on consumer behaviour. Participants learned that their task was to shop for one meal of spaghetti with tomato sauce for their peers from either home or college. Participants then received a "training" sheet: participants all formed the goal *we want to be thrifty with our money* and additionally specified a self-regulation strategy. The wording was varied systematically (Table 1): in the implementation intention condition, an appropriate strategy was phrased in an if-then format that is known to automate the execution of the planned behaviour: *whenever we want to put something in our shopping cart, then we will take only what we really need*. In the strategy-control condition, this helpful strategy was not in an if-then format: *we will only put things in our shopping cart that we really need*. Finally, in the if-then control condition, the strategy was not geared towards reducing unintended purchases but kept all of the relevant words of the implementation intention (e.g. shopping cart, really need) using an if-then format: *whenever we want something that we really need, then we will put it in our shopping cart.* Although this strategy is semantically very similar to that specified in the implementation intention, it only supports buying what one would buy anyway (i.e. intended purchases) and, thus, should not help reduce impulse purchases. All plans referred to a group to increase the salience of the social context (i.e. shopping for peers from home vs college peers). Participants read, envisioned and wrote down the respective plan. Participants were then seated in front of a printed picture of a shopping cart with cards of a wide range of food items placed behind it. The 34 available items represented the range of products available in the local supermarket, including fresh produce, canned foods, snack foods and beverages. Importantly, eight of these products could be used to prepare pasta with tomato sauce (e.g. pasta, tomatoes) while the remaining 26 items (e.g. apples, chocolate and rice) were unrelated to this dish. The experimenter always arranged the items in the same order, which was modelled on a near-by supermarket. Participants learned that they could buy items by putting them in their cart and that they could buy as many items as they wished. Finally, participants indicated their goal commitment (five items, e.g. "I want to achieve my goal", $\alpha = .54$) [1] and plan commitment (three items, e.g. "I want to fulfil my plan", $\alpha = .81$) on five-point scales (1: *not at all* to 5: *very much*), provided demographic information and indicated when they had had their last meal; they then received an extensive debriefing.

The experimenter unobtrusively noted the shopping items placed into the cart. The number of items in the shopping cart that was unrelated to spaghetti and tomato sauce served as the dependent measure; the number of spaghetti-and-sauce items was checked to ensure that participants across conditions performed that task equally well.

3.2 Results and discussion

3.2.1 Manipulation check and preliminary analyses. Participants indicated that the group scenarios were realistic, $M = 4.13$, $SD = 0.77$ and were sufficiently committed to their goals, $M = 4.11$, $SD = 0.52$ and strategies, $M = 3.91$, $SD = 0.69$. Participants across conditions bought an equal amount of ingredients for spaghetti and tomato sauce, $M = 2.78$, $SD = 1.09$, $Fs < 1.30$, $ps > .28$ [2].

3.2.2 Main analysis. To test the main hypotheses that peers increase impulse buying counter to set goals (*H1*) and that if-then plans reduce this influence (*H2*), the number of items unrelated to spaghetti and tomato sauce were entered in a between-subjects ANOVA with peer influence (shopping for friends from home vs shopping for fellow students) and implementation intention (if-then strategy vs strategy control vs if-then control) as predictors. In support of *H1*, the expected main effect of peer influence emerged, $F(1, 114) = 4.06$, $p = .05$, *part.* $\eta^2 = 0.03$: participants shopping for their friends from homemade more impulse purchases, $M = 3.19$, $SD = 2.31$, than participants shopping for their fellow students, $M = 2.38$, $SD = 1.78$ (Figure 1).

Moreover, in support of *H2*, the expected main effect of implementation intention emerged, $F(2, 114) = 3.40$, $p = .04$, *part.* $\eta^2 = 0.06$: in comparison to an if-then control plan, $M = 3.39$, $SD = 2.35$, a strategy control plan led to less impulse buying, $M = 2.75$, $SD = 1.92$. However, implementation intention participants made the fewest impulse purchases, $M = 2.15$, $SD = 1.80$. Polynomial contrasts comparing the three conditions showed a significant linear effect, $p = .01$, but no quadratic effect, $p = .99$, suggesting that the if-then format contributed to the implementation effect.

Finally, this implementation intention effect was not qualified by a peer influence × implementation intention interaction effect, $F(2, 114) = 0.39$, $p = .91$, suggesting that implementation intentions were effective for both peer contexts. This finding is in line with the result of the pretest, where students indicated that they had much experience with this special shopping context and the available items. Apparently, they impulse bought even when the social influence was quite weak. This may suggest that consumers need implementation intentions even when they are not faced with a strong social norm that runs counter to their goals (Gollwitzer and Sheeran, 2009).

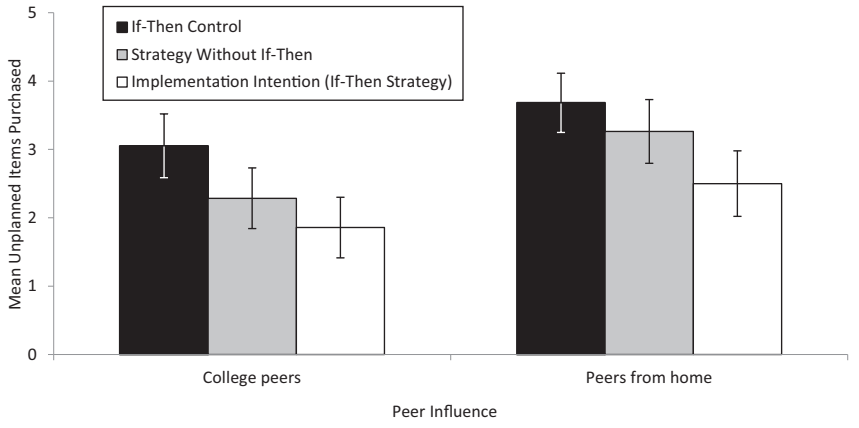

Figure 1.
A number of unplanned items purchased by intention condition and peer influence (Study 1). Error bars represent standard errors

In sum, the implementation intention to purchase only what one needs reduced impulse buying when facing a wide range of familiar and tempting items regardless of whether shopping was done for one's peers from home or college peers. The if-then format contributed to this beneficial effect, which supports the assumption that the control of automatic peer influence on impulse buying requires automatic action control processes.

4. Study 2: predictors of peer influence on impulse buying

Study 2 used a scenario task to address additional questions as follows: The first aim was to test our hypotheses in another population and with another product category. Adolescents (i.e. young consumers between the ages of 16 and 18) may be especially affected by social influence (Blakemore, 2018) but have largely been neglected in past research on impulse buying. As the qualitative pre-test in Study 1 indicates, this population has a high acceptance of impulse buying. Clothing is commonly purchased on impulse (OnePoll, 2018) and usually for oneself. To rule out that social choices (i.e. shopping for others; Laran, 2010) rather than impulsive buying drives the observed effects, an individual clothes-shopping vignette-paradigm was used.

The second aim of Study 2 was to establish how norms and automaticity, as well as goals and plans, affect impulse buying simultaneously. Participants' perceived automaticity of shopping with peers (Gardner, 2015) and norms were assessed. The literature on social norms commonly distinguishes between what is considered appropriate (i.e. *injunctive norms*) and what people actually do (i.e. *descriptive norms*) (Cialdini, 2012). Study 1 assumed that injunctive and descriptive norms are jointly present but both types of norms may affect behaviour in different ways (Nolan *et al.*, 2008; Jacobson *et al.*, 2011). Therefore, measures of what peers find appropriate (injunctive norm) and what they actually do (descriptive norm) were included. Additionally, exploratory measures of habit strength (Wood *et al.*, 2005) were assessed. Finally, a plan manipulation was included to investigate how goals and plans can curb this impact of norms and automaticity. Participants set the goal to be thrifty and either furnished this goal with an implementation intention designed to curb impulse buying or not.

Third, Study 2 used a larger sample that even allows detecting small effects. Although Study 1 was sufficiently powered to detect a typical implementation intention effect of d = 0.65, it may not have been sufficient to detect a possible interaction. It was expected that norms, as well as automaticity increase impulse buying and that implementation intentions, reduce this impact.

4.1 Method

4.1.1 Participants. In total, 773 high school students (607 female) from southern Germany with a mean age of 17.20 years (SD = 2.81) completed the questionnaires administered in testing sessions after a lecture. In total, 87 participants failed the attention check (see below; 68 female, M_{age} = 17.96, SD = 6.12) and consequently were removed from analyses, leaving a sample size of N = 686. Retained and excluded participants did not systematically differ in their age, t (85.31) = 1.28, p = .21 or gender, χ^2 (1) = 0.003, p = .95. A power analysis (Faul *et al.*, 2007) setting $1-\beta$ = .80 indicated that the remaining sample size was sufficient to detect a small effect.

4.1.2 Procedure. On the first page of the questionnaire, participants learned that the study concerned the attitudes of young adults and gave their informed consent. Participants then learned that they would read several short texts (scenarios) and would be asked to answer a few questions about each scenario. It was emphasized that it was important to

imagine the scenarios vividly. The first scenario was about a new personal goal that participants set. For participants in the implementation intention condition, this scenario included the goal to save money and the if-then plan "if I want to put something in my shopping cart, then I will take only what I really need!" In the control condition, the scenario included the goal to save time and the if-then plan "if I want to watch a show, then I will choose only what I really like!" Participants in both conditions were asked to imagine that they would tell themselves the respective plan every morning. Both conditions were, thus, as parallel as possible: goals in both conditions instructed participants to be thrifty but only the experimental condition referred to saving money. All participants answered four items on their commitment to the goal (α = .74) and four items on their commitment to the plan (α = .82) at the bottom of the page on five-point scales (1: *not at all* to 5: *very much*) ("How committed are you to your goal [plan]? To what extent do you care about your goal [plan]? How dedicated are you to goal [plan]? To what extent have you chosen to be committed to goal [plan]"? 1: not at all – 5: very much; adapted from Klein *et al.*, 2014).

The second scenario described a shopping situation (adapted from Rook and Fisher, 1995; Luo, 2005). Participants were asked to imagine that they go into town to buy socks [3]. All participants then read that their favourite store had a large sale with 50% off. In addition to the socks, they find seven items that they really like (t-shirt, belt, scarf, hat, sweater, trousers and jacket) among the sale items. To help participants adjust the scenario to their own favourite store and to take into account different price points, prices for the items were not indicated. Participants then indicated for each item if they would put it into their shopping cart. All items beyond socks were considered impulse purchases (Luo, 2005).

To assess the correlates of impulse buying, participants were then asked to report their peers' social norms and their perceived automaticity of shopping with peers. Regarding social norms, participants completed three items on their injunctive norms ("my best friends encourage me to go shopping", "my best friends think that I should shop more", "my best friends like shopping"; 1: does not apply at all – 5: completely applies, α = .68) and one item on their friends' behaviour (descriptive norm; "How often do your best friends shop"? 0: never, 1: once a month or less, 2: at least once a week, 3: almost every day). Four exploratory items on the importance of peers were included but these items did not form a reliable scale, and therefore, are not considered further.

Regarding automaticity, participants completed a five-item measure (α = .79) of how automatic they perceived shopping with their friends (e.g. "shopping with my friends is something that I do automatically" 1: does not apply at all – 5: applies completely; adapted from Gardner *et al.*, 2012). As a potential further context variable, it was assessed whether participants usually go to the same shops ("Do you usually shop in the same shops"? 1: usually in the same shops, 2: sometimes the same, sometimes different, 3: always in different shops) and how often they shop as a measure of habit strength ("How often do you shop"? 0: never, 1: once a month or less, 2: at least once a week, 3: almost every day; "Do you shop with your best friends"? 1: no, mostly alone, 2: sometimes with my best friends, 3: usually with my best friends; adapted from Wood *et al.*, 2005).

Finally, participants provided demographic information and were debriefed. At the end of the shopping scenario, one item asked participants to select a particular response (4) as an attention check.

4.2 Results and discussion

4.2.1 Data analytic strategy. The primary focus was on the correlates of impulse buying, which were evaluated by estimating generalized linear mixed-effects models (GLMMs) using the lme4 package version 1.1–12 (Bates *et al.*, 2015) implemented in R version 3.3.1 (R-

Core-Team, 2016). GLMMs simultaneously estimate fixed effects (e.g. experimental factors and continuous predictors) and random effects (e.g. participants and items) without requiring data aggregation. This is an advantage because it accounts for both the possibility that some participants are more likely to impulse buy than others and the possibility that items differ in the likelihood to be selected as impulse purchases. GLMMs, therefore, lead to more robust and generalizable conclusions (Judd *et al.*, 2012). Moreover, GLMMs can handle discontinuous outcome variables, enabling analyses of each potential impulse buying an item as a binary choice (0: item not selected, 1: item selected).

4.2.2 Correlates of impulse buying. In total, 93.6% of the participants chose the target item (socks; correlations in Table 2) and more than half of the participants (59.6%) made at least one impulse purchase decision. In line with expectations, the items differed considerably in their likelihood to be selected as impulse purchases (sweater: 29.9%, trousers: 25.8%, t-shirt: 24.9%, jacket: 21.1%, scarf: 18.4%, hat: 7.0% and belt: 5.0%). To establish the correlates of impulse buying, all potential predictors were entered into a single GLMM with impulse purchases as the dependent variable and all potential predictors of impulse buying. Including all predictors in one model tests the effect of each predictor while adjusting for all other predictors. This model, therefore, allows assessing the incremental predictive power of each predictor beyond all other predictors in the model. In this model, peer injunctive norms (i.e. what is considered appropriate), $\beta = .215$, $OR = 1.24$, $SE = 0.086$, $z = 2.482$, $p = .013$ and the automaticity of shopping with friends, $\beta = .223$, $OR = 1.25$, $SE = 0.080$, $z = 2.800$, $p = .005$, predicted impulse buying. Injunctive norms represent a reflective influence, while automaticity represents an impulsive influence. This pattern of results is, therefore, in line with the reasoning that peers increase impulse buying via deliberate and automatic processes.

Turning to additional context factors, reported peer behaviour (descriptive norms), the habit strengths of shopping with friends and shopping in the same shops all did not impact impulse buying, ps > 0.13. This further supports the reasoning that injunctive norms and automaticity are the main processes of peer influence on impulse buying.

4.2.3 Do implementation intentions curb the correlates of impulse buying? Implementation intentions had no main effect on impulse buying, $p = .751$ [4]. To test whether implementation intentions help curb the impact of peer norms and automaticity, interaction effects of implementation intentions (yes vs no) and the two significant predictors (injunctive norms and automaticity) were examined with GLMMs. Implementation intentions attenuated the impact of injunctive norms, $\beta = -0.333$, $OR = 0.72$, $SE = 0.164$, $z = 2.03$, $p = .042$: stronger injunctive norms were a highly significant predictor of impulse buying in the control condition, $\beta = 0.542$, $OR = 1.72$, $SE = 0.123$, $z = 4.40$, $p < .001$, but were non-significant in the implementation intention condition, $\beta = .209$, $OR = 1.23$, $SE = 0.108$, $z = 1.94$, $p = .053$. Implementation intentions also attenuated the effect of automaticity on impulse buying, $\beta = -0.346$, $OR = 0.71$, $SE = 0.146$, $z = 2.38$, $p = .018$: automaticity was a highly significant predictor in the control condition, $\beta = .529$, $OR = 1.70$, $SE = 0.109$, $z = 4.86$, $p < 0.001$, but non-significant in the implementation intention condition, $\beta = 0.183$, $OR = 1.20$, $SE = 0.097$, $z = 1.88$, $p = .060$. Implementation intentions, thus, curb the peer impact on impulse buying.

In sum, the observed pattern of impulse buying decisions supports the predictions: not only social norms but also the automatic influence of peers promotes impulse buying. Moreover, implementation intentions can attenuate this peer impact on impulse buying.

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Plan commitment	3.99	0.72									
2. Goal commitment	3.95	0.66	0.67**								
3. Automaticity	2.45	0.92	−0.03	−0.03							
4. Injunctive norm	2.33	0.81	0.02	0.01	0.28**						
5. Habit shopping with peers	2.28	1.13	−0.02	−0.05	0.40**	0.29**					
6. Usually go to the same shop	1.73	0.84	0.03	−0.02	0.14**	0.05	0.46**				
7. Impulse purchases (sum other)	1.32	1.48	−0.16**	−0.10**	0.16**	0.16**	0.14**	0.05			
8. Descriptive norm	1.13	0.44	−0.03	0.01	0.23**	0.22**	0.40**	0.27**	0.11**		
9. Planned purchase (socks)	0.94	0.25	0.12**	0.02	−0.06	−0.04	−0.07	−0.02	−0.26**	−0.10*	
10. Plan condition	0.55	0.50	0.11**	0.10**	0.06	0.06	0.02	0.06	0.01	0.09*	0.00

Notes: *indicates $p < 0.05$; **indicates $p < 0.01$

Table 2.
Means, standard deviations and correlations (Study 2)

5. General discussion

This paper argues that peer influence on impulse buying among young consumers may operate quite automatically and young consumers, thus, need to make if-then plans to curb impulse buying. In line with this reasoning, automaticity emerged as a particularly strong predictor of peer influence in both studies. Implementation intentions especially reduced impulse buying when this plan was phrased in an if-then format (Study 1). Because the if-then format is known to automate action control, this observation also supports the assumption that peer influence not only operates deliberatively via norms but may also operate quite automatically; apparently, breaking an unwanted automatic influence needs antagonistic automatic processes (Adriaanse *et al.*, 2009). In Study 2, self-reported automaticity predicted impulse buying, even when accounting for habit strength and social norms and this automatic impact was moderated by if-then plans. These results were obtained across two different populations (adolescents and young adults), two different tasks (laboratory shopping task and survey vignettes) and two different shopping contexts (grocery shopping for friends and individual clothes shopping). This highlights the pervasive nature of the automatic peer impact on impulse buying.

5.1 The role of automaticity in peer influence and consumer behaviour

The present research indicates that peer influence on impulse buying leads to automated responding. Other forms of social influence may also lead to relatively automatic responding but are acquired in a different way. For instance, in a study by Nolan *et al.* (2008) participants rated how other people behave (*descriptive norms*) as the least important factor influencing their behaviour, but these descriptive norms were actually a better predictor than any other variables assessed in this study (see also Cialdini *et al.*, 1990; Goldstein *et al.*, 2008). Social influence, therefore, may not only always operate via norms that lead to setting respective goals but also quite automatically. Study 2 suggests, however, that descriptive norms (i.e. what peers actually do) are a weaker predictor of impulse buying than is automaticity, potentially because automaticity is more proximal to the observed behaviour.

Under some circumstances, social influence may only operate automatically when the respective goal is active. For instance, students looking at a picture of the library lowered their voice, but only if they had the goal to visit the library and if their peers were quiet inside the library (i.e. a strong descriptive norm was present; Aarts and Dijksterhuis, 2003). This suggests that the normative influence was conditional on the set goal and this type of conditional automaticity also seems to characterize the action control by implementation intentions (Achtziger *et al.*, 2012).

Beyond peer influence on impulse buying, the present research has implications for consumer behaviour more generally. Much of what consumers do is automatic (Wood and Neal, 2009; Dijksterhuis *et al.*, 2005). For instance, consumers often purchase traditional products despite their intentions to buy products that adhere to stricter ethical standards (Belk *et al.*, 2005), potentially because they stick to their habitual brand. This brand loyalty is an automatic influence that is difficult to overcome with mere goals (Wood and Neal, 2009), and therefore, has much in common with the automatic impact of peers on impulse buying in the present research. Also in line with the present research, implementation intentions can help consumers close the gap between their ethical intentions and their actions (Carrington *et al.*, 2010). If-then planning, thus, is a powerful tool to improve consumer decisions (Gollwitzer *et al.*, 2017).

Consumer research has identified many situational factors that impact consumer decisions such as the numbers and units used (Monga and Bagchi, 2012), how caloric information is displayed (Parker and Lehmann, 2014), which drink sizes are offered (Sharpe

et al., 2008) and whether consumers pay with cash or credit card (Chatterjee and Rose, 2012). Presumably, these situational factors also affect consumer decisions outside of awareness. The most commonly used tool by policymakers to help consumers gain control over these influences is to regulate them externally (e.g. by prescribing certain payment methods). The present research suggests that policymakers could also encourage consumers to form implementation intentions to lessen the impact of situational factors via self-regulation (e.g. to remind oneself of the cash-value of a credit card payment). Recent research has introduced implementation intention inductions that maybe suited to target a large number of people. These inductions include persuasive appeals (Fennis *et al.*, 2011) or explicit instructions via standardized phone calls (Nickerson and Rogers, 2010) and via a mobile app (Oettingen, 2014; see also www.woopmylife.org). Even though the translation of psychological research into large-scale psychological interventions is a complex endeavour (Cohen and Sherman, 2014), the present research is an important step towardsempowering consumers to make and implement rational, informed decisions (Len *et al.*, 2006).

5.2 Limitations

There are limitations of the present research that warrant discussion. Firstly, the present research takes a rather static view on social influence, with peers affecting one shopping trip. In real life, consumer choices in social contexts lead to responses from these others (Zhang, 2019), which may impact social relationships and life satisfaction (Brick *et al.*, 2017). Especially for young consumers, the enjoyment of shopping with others is key (Wenzel and Benkenstein, 2018). Strict opposition to any impulse purchases in this group may be perceived as anti-social or simply "not fun", leading to social exclusion. Although these may be extreme cases, future research should certainly attend to such dynamic processes.

Secondly, the present research focussed on simulated in-store settings. Online behaviour such as writing a review (Motyka *et al.*, 2018) or using social commerce platforms (Xiang *et al.*, 2016) may increase the social influence on impulse buying. For instance, seeing positive recommendations online and extended browsing has been shown to increase impulse buying (Chen *et al.*, 2019; Zhang *et al.*, 2018). Shopping in such an online social environment may lead to the experience of flow, which can increase impulse buying online (Huang, 2016). Moreover, Study 1 contained more male and Study 2 contained more female participants. Future research should explore whether gender differences in susceptibility to peer influence on impulse buying do exist. Finally, participants in the current research did not make purchases in an actual store. Past research has observed if-then planning effects in incentivized decisions (Thürmer *et al.*, 2015b) and in naturalistic settings (Holland *et al.*, 2006), suggesting that the present findings may generalize to such contexts. Nevertheless, future research should test whether implementation intentions are effective for regulating peer impact on actual purchase decisions and online shopping behaviour.

Thirdly, the implementation intentions used in the present research contained a concrete response (i.e. take only what one really needs). Recent research demonstrates that implementation intentions may also promote more abstract, internal responses such as ignoring pain or doubt (Thürmer *et al.*, 2013, 2017), weighing the pros and cons of decision alternatives (Thürmer *et al.*, 2015b; Wieber *et al.*, 2015b) and even instigating deliberation in general (Doerflinger *et al.*, 2017). Implementation intentions may, therefore, also promote more abstract strategies to decrease impulsive buying, such as increasing the salience of the costs of impulse buying (Puri, 1996) or reducing emotions leading to impulse buying (Donnelly *et al.*, 2016). Such abstract strategies may generalize across a wide range of contexts and can, therefore, have a large impact on day-to-day shopping behaviour.

Finally, the present research focusses on young consumers and it would be interesting to explore whether the current findings generalize to consumers in general. For instance, the impact of young children on their parents' impulse buying behaviour may be quite strong, for instance when children forcefully demand the purchase of unplanned items such as candy (McDermott *et al.*, 2006). Such "pester power" should be hard to regulate because of high emotional involvement (e.g. embarrassment) and limited cognitive resources. Few studies have applied if-then planning to parenting (Van Osch *et al.*, 2008) but if-then planning has been shown to be effective when limited cognitive resources are available and negative emotions need to be down-regulated (Schweiger Gallo *et al.*, 2009; Wieber *et al.*, 2015b).

5.3 Contributions and avenues for future research

The insights from the present research open up a number of new avenues for future research. First, the current research acknowledges the importance of social influence and of automatic processes and thereby contributes to a thriving field of research. The present research touches on important debates such as the free will in consumer choice (Baumeister *et al.*, 2008), self-related processes (e.g. consumption to reduce self-discrepancies; Mandel *et al.*, 2017) or goal pursuits in line with predominant mindsets (Murphy and Dweck, 2016). A recent review moreover concludes that sharing information and opinions about products (i.e. word of mouth) is driven by self-serving motives that people may not be aware of Berger (2014). It, therefore, seems that not only the consequences but also the causes of social influence may operate quite automatically. Such a model could potentially also account for other forms of social influence such as between grandparents and grandchildren (Godefroit–Winkel *et al.*, 2019). Developing a dynamic model of social influence on consumer decisions is a highly fruitful avenue for future research.

More broadly, the present research supports the RIM of consumer choice (Strack *et al.*, 2006; Hofmann *et al.*, 2008). Not only did the present research find consistent support for automatic peer influence but also for deliberate influence via injunctive norms. Moreover, by integrating the RIM and implementation intentions (Martiny–Huenger *et al.*, 2011, 2016), the present research shows how implementation intentions enable consumers to implement reflective decisions. For continuing this integration, it would be highly fruitful to use direct measures of automaticity such as the implicit association test or electroencephalography (Friese *et al.*, 2016) and to explore the brain regions involved in consumer choice using functional near-infrared spectroscopy (fNIRS) or functional magnetic resonance imaging (fMRI) (Perit *et al.*, 2018; Marco *et al.*, 2018). Recent studies have started using fNIRS with physical tasks (Wolff *et al.*, 2019, 2018), opening up this methodology to applied settings. Implementation intentions are known to impact these measures (review and meta-analysis by Gollwitzer and Sheeran, 2006; Wieber *et al.*, 2015b) and such studies would, therefore, be highly promising.

Finally, current research has identified a host of potential moderators of social influence on adolescents' impulse buying decisions. Brand loyalty has a pervasive impact on the actual purchase of a product (Sheth and Koschmann, 2019, but see Keller, 2019) and on consumption-related social behaviour such as word-of-mouth (Thompson *et al.*, 2019). The perception of and loyalty to brands, thus, likely moderates social influence effects on purchase decisions. Moreover, technological innovations (Lowe *et al.*, 2019; Hollebeek *et al.*, 2019) such as social networks (O'Leary and Murphy, 2019) are likely to extend the definition of "peers" beyond the immediate physical environment. In line with this reasoning, recent research suggests that heavy multimedia use may increase the susceptibility to an advertisement (Beuckels *et al.*, 2019). It is also likely that peer influence may differ across

product categories, such as music (Sinclair and Saren, 2019), dining (Veeck, 2018), "green" products (Lee, 2009) and gift-giving among adolescents (Segev, 2016). The present research, thus, opens up a host of avenues for future research.

5.4 Practical implications

With respect to applied issues, the following contributions seem most pertinent. First, young consumers are highly prone to impulse buying and are accumulating debt at an increasing rate. In line with past research, existing approaches to educating young consumers rely on providing information, thus assuming that problematic impulse buying is a deliberate process. The current research demonstrates that the impact of peers can also be quite automatic, which suggests that merely educating young consumers may be insufficient to attain lasting behaviour change.

The present research also suggests that if-then plans can help young consumers gain control over problematic impulse buying behaviour. Recent research has introduced implementation intention inductions suited to target a large number of people. These inductions include persuasive appeals (Fennis *et al.*, 2011), explicit instructions via standardized phone calls (Nickerson and Rogers, 2010) and by pointing people to a mobile app (Oettingen, 2014; see also www.woopmylife.org) that guides them to from if-then plans targeting their personal obstacles standing in the way of realizing a wished behaviour change. Even though the translation of psychological research into large-scale psychological interventions is a complex endeavour (Cohen and Sherman, 2014), the present research is an important step towards empowering young consumers to make and implement decisions of their own liking.

Finally, chronic impulse buying also referred to as *compulsive buying* (Ridgway *et al.*, 2008; O'Guinn and Faber, 1989) has drastic consequences for those affected. Compulsive buying is a strong established tendency to engage in impulse buying and it may, thus, require more powerful interventions than those used in the present research. One approach is to tailor implementation intentions to a person's subjective motivations (Adriaanse *et al.*, 2009; Oettingen, 2012). The motivation for compulsive buying mainly is to regulate negative emotions pertaining to the self (Faber, 2000). As implementation intentions have been found to regulate even chronic emotions that pertain to the self (Schweiger Gallo *et al.*, 2009; Thürmer *et al.*, 2013), implementation intentions might even help compulsive buyers reduce unintended purchases. Interestingly, recent neuroscientific and behavioural evidence suggests that peer influence may actually decrease impulse buying among those consumers who are highly compulsive (De Vries *et al.*, 2018). One avenue for planning interventions could, thus, be to develop if-then plans that remind compulsive buyers of their social obligations. Investigating the effectiveness of such plans to reduce compulsive buying seems to be a fruitful avenue for future research.

In sum, the present research demonstrates that analysing social influence and implementation intentions conjointly can inform consumer behaviour in multiple new ways. Integrating these literature is not only practically relevant but also a long-overdue contribution to planning research (Hagger *et al.*, 2016). This way, the present research can help young consumers make better purchase decisions that are in line with their long-term goals.

Notes

1. Reliability for this manipulation check scale was unsatisfactory. The results should, therefore, be interpreted with caution.
2. Box plots (McGill *et al.*, 1978) of the dependent measure indicated two outliers (one in the students/helpful strategy without if-then format condition and one in the friends/no helpful

strategy condition). Removing these cases rendered the implementation intention effect non-significant, F (1,118) = 2.901, p = .059, but did not change the pattern of results. Entering when participants had eaten their last meal or participant gender as a covariate did not change any of the results reported below.

3. We also sought to manipulate the peer presence: the scenario indicated either "after school, you wander through shops in town with your best friends" (peers present condition) or "after school, you wander through shops in town alone" (peers absent condition). Contrary to predictions, this minimal change in the description had no main effect (p = .831) or interaction effects with any of the reported correlates of impulse buying (all ps > .280) or the implementation intention factor, p = .183. As a potential explanation, participants came to the sessions with their high-school class and they were, therefore, potentially sitting next to their friends when completing the survey. This large peer influence may, therefore, have masked the minimal effect of the wording change. Findings regarding peer norms and habits are consistent with this view.

4. Participants who formed a useful goal and a useful implementation intention reported greater goal commitment (M = 3.957, SD = 0.677) than participants who did not (M = 3.841, SD = 0.740), t (698.01) = 2.250 and this was also true for plan commitment (M_{II} = 4.018, SD = 0.689; $M_{control}$ = 3.881, SD = 0.810), t(648.68) = 2.454. Adjusting for goal commitment and plan commitment did not alter the results. Entering participant gender as a covariate did not change any of the results reported below.

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