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Hard to Ignore: Impulsive Buyers Show an Attentional Bias in Shopping Situations

Oliver B. Büttner[1], Arnd Florack[1], Helmut Leder[1], Matthew A. Paul[1], Benjamin G. Serfas[1], and Anna Maria Schulz[1]

Abstract

This research focuses on the attentional processes that underlie buying impulsiveness. It was hypothesized that impulsive buyers are more likely than nonimpulsive buyers to get distracted by products that are unrelated to their shopping goal. The study applied a 2 (buying impulsiveness low vs. high) $\times$ 2 (shopping vs. nonshopping context) $\times$ 2 (product vs. nonsemantic distractors) mixed design. Participants' attention allocation was measured via eye tracking during a visual distraction paradigm. The results support the distraction hypothesis. Impulsive buyers allocated less attention to a focal product than nonimpulsive buyers. The effect was context-specific and emerged only when the task was framed as a shopping situation. The results show that distraction is not limited to attractive products and suggest that it is driven by a general attentional openness for products in shopping situations.

Keywords

impulse buying, consumer behavior, attention, self-regulation, personality

Most consumers cannot draw on unlimited financial resources and thus cannot buy everything they feel tempted to buy. Some consumers, however, seem unable to resist such temptations and engage repeatedly in unplanned purchases that they regret afterward (Faber & Vohs, 2011). This behavioral pattern has been linked to the trait of buying impulsiveness (Rook & Fisher, 1995; Verplanken & Herabadi, 2001). High buying impulsiveness goes along with lack of deliberation and strong emotional responses during shopping (Rook & Fisher, 1995; Verplanken & Herabadi, 2001). It can also take a pathological form, which is referred to as compulsive buying, and may result in severe financial and social consequences (O'Guinn & Faber, 1989; Ridgway, Kukar-Kinney, & Monroe, 2008).

Previous research has largely conceptualized impulse purchases as the result of a self-control conflict between desire and willpower when individuals make a purchase decision; this conflict is lost because either desire is too high or willpower is too low (Hoch & Loewenstein, 1991; Ramanathan & Menon, 2006; Vohs & Faber, 2007). Likewise, high buying impulsiveness as a trait can be described as a chronic self-control problem and it has been related to a higher responsiveness toward rewards as well as to a lack of dispositional self-control (Claes et al., 2010; Ramanathan & Menon, 2006; Verplanken & Sato, 2011).

The present research posits that buying impulsiveness does not only enfold its influence when a consumer makes a decision whether to purchase a product or not but already at the level of attention toward opportunities for purchases. Shielding one's goals from distracting stimuli is crucial for successful self-control (Bayer, Gollwitzer, & Achtziger, 2010; Shah, Friedman, & Kruglanski, 2002). When consumers go shopping, different products compete for their attention. We propose that impulsive buyers are less successful than nonimpulsive buyers at shielding their focal shopping goal against such distracting stimuli. In addition, we examine whether such a higher distractibility is limited to contexts (i.e., shopping situations) and type of stimuli (i.e., attractive products).

The proposition that impulsive buyers are more easily distracted in shopping situations has been informed by research from another domain of chronic self-control failure: drug addiction. According to the incentive sensitization theory of addiction, repeated exposure to drugs changes a person's sensitivity to drug-related stimuli (Robinson & Berridge, 2008). This leads to an attentional bias: For drug users (e.g., heavy social drinkers), drug-related stimuli (e.g., pictures of an alcoholic drink) draw more attention than competing stimuli (e.g., a soft drink; Field, Mogg, Zetteler, & Bradley, 2004; Friese, Bargas-Avila, Hofmann, & Wiers, 2010). Further studies have demonstrated that the strength of the attentional bias predicts relapses (Marissen et al., 2006; Waters et al., 2003). At least two mechanisms might underlie this relation. The increased

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awareness toward drug-related stimuli may increase the opportunities for a relapse (Waters et al., 2003). In addition, the focus on drug-related stimuli may give rise to drug-related cognitions, which increase craving (Field & Eastwood, 2005; Field, Mogg, & Bradley, 2004). Overall, previous research strongly suggests that the attentional bias plays a major role for why self-control often fails and drug consumption is maintained.

We posit that a similar attentional bias exists for consumers with high buying impulsiveness. Attending to shopping-related stimuli has a highly rewarding quality to these consumers (Verplanken & Sato, 2011). Impulse purchases elicit predominantly positive affective states (Gardner & Rook, 1988) and impulsive buyers generally enjoy shopping (Beatty & Ferrell, 1998). Highly impulsive buyers even shop in order to repair negative mood or to reduce discrepancies from their ideal self (Dittmar, 2005; Dittmar & Drury, 2000; Faber & Christenson, 1996). And in the same way as with drugs such as alcohol or nicotine, some individuals develop repetitive patterns of addictive behavior that lead to negative outcomes and cannot be controlled easily (O'Guinn & Faber, 1989; Scherhorn, 1990). Taken together, these findings suggest the hypothesis that impulsive buyers will develop an increased sensitivity toward shopping-related stimuli, which translates into the aforementioned attentional bias. As a consequence, these consumers should be less successful at shielding their focal goal from distracting stimuli in shopping situations.

What are the characteristics of this attentional bias? Buying impulsiveness has been conceptualized as domain-specific impulsivity (Rook & Fisher, 1995; Verplanken & Herabadi, 2001). This implies a central hypothesis: The attentional bias of impulsive buyers should only emerge in shopping situations. Recent findings from Tsukayama, Duckworth, and Kim (2012) support this hypothesis. They demonstrate that individuals who act impulsively in one domain are not necessarily tempted to act impulsively in other domains. The domain specificity of buying impulsiveness also implies that the attentional bias is restricted to shopping-related stimuli, such as products, and does not reflect a general openness toward visual stimuli in general.

Impulsive buyers experience positive affect from shopping and may even become more interested in the process of shopping than in the products they buy (O'Guinn & Faber, 1989; Verplanken & Herabadi, 2001). This implies that the increased sensitivity toward shopping-related stimuli should not be limited to highly attractive products—which most buyers also find attractive and purchase on impulse from time to time—but extend to any other products as long as these present an opportunity to engage in purchasing. Thus, we propose that impulsive buyers will have a higher sensitivity to any product that they encounter during shopping, and not only to highly attractive products.

The present research used eye tracking to examine the postulated attentional bias. First, we examined the basic hypothesis that consumers with a high tendency for impulsive buying are less successful at shielding their focal goal against distracting stimuli (i.e., products) in a shopping situation. Second, we examined whether this higher distractibility is restricted to shopping situations. We hypothesized that the same stimuli that draw the attention of impulsive buyers in a shopping context do not draw their attention in a nonshopping context. Finally, we examined the hypothesis that the distraction effect is driven by a general attentional openness toward products—and not by the attractiveness of the products or by a general attentional openness toward visual stimuli in general.

Method

Participants and Design

We recruited female students from the local subject pool. Participants were asked to fill in an online questionnaire at home and then were invited to the laboratory. This resulted in a final sample of 55 participants ($M_{\text{age}} = 24.1$, $SD = 4.54$). Participants received 7 € as compensation.

Context (shopping vs. nonshopping) was a between-subjects factor, distractor type (products vs. nonsemantic distractors) was a within-subjects factor, and buying impulsiveness was a measured variable. Product type (attractive vs. task related) was an additional within-subjects factor in the product distractor trials.

Material

To test whether the postulated distraction is limited to products as distractors or whether it occurs with any type of distractors, we used two different types of distractors: products and nonsemantic stimuli. In the product distractor trials, the focal product was a picture of a toy, whereas a picture of another toy and a picture of a cosmetic product served as distractors. In the nonsemantic distractor trials, the focal product was also a picture of a toy and two nonsemantic stimuli, which did not carry any meaning, served as distractors.

Product Stimuli. Product stimuli were pictures from two product categories: cosmetics and toys. We chose cosmetics because these are products with high attractiveness in the sample (female students) and are often purchased on impulse (Verplanken & Herabadi, 2001). By contrast, toys are rather neutral. A pretest with 25 female students supported this assumption: The cosmetics were clearly evaluated more favorably than the toys, in terms of both attractiveness (4.4 vs. 3.3; 7-point rating scale), $F(1, 23) = 8.40$, $p = .008$, and purchase likelihood (3.5 vs. 2.6), $F(1, 23) = 6.13$, $p = .02$. Stimuli for the cosmetics category consisted of 42 pictures of cosmetics such as lipstick, nail polish, or perfumes (for each participant, a random sample of 30 cosmetics was drawn from these pictures). Stimuli from the toy category consisted of 90 pictures of toys, such as diggers, dolls, or plastic shovels.

Nonsemantic Stimuli. We created a set of 60 nonsemantic stimuli out of the product stimuli using a shuffling software algorithm: Each product picture was divided into a matrix of 20×20 pixel clusters, which were then randomly shuffled. The result of the algorithm was a random pattern of rectangular shape that did not carry any semantic information, yet consisted of the same color pixels as the original product picture.

Procedure and Measures

Data collection occurred in two steps. First, participants answered an online questionnaire that contained the Buying Impulsiveness scale ($\alpha = .79$) from Rook and Fisher (1995).[1] Second, participants came to the laboratory (days between both steps: $M = 16.7$, $SD = 23.28$, range: 1–100, no significant difference between experimental conditions, $t < 1$, $p = .48$). They were randomized to one of the two experimental conditions (shopping context: $n = 27$; nonshopping context: $n = 28$) and read a scenario that manipulated the context. Then, participants' gaze was measured during a visual distraction task. All participants completed the same visual distraction task, but this task was framed differently in the shopping condition and in the nonshopping condition.

In the shopping condition, the visual distraction task was introduced as a simulated shopping task. Participants were told that the study was about shopping behavior. They read about Maria, a 24-year-old psychology student who was on a shopping trip. As her nephew would soon celebrate his third birthday, she wanted to look for a toy as a possible gift. In order to increase immersion in the scenario, participants were asked to write a few sentences about Maria's shopping trip. Then participants were informed that Maria's shopping trip was to be simulated in an eye-tracking task. Participants were told that they would see a toy marked with a frame, representing the toy that Maria is looking at during her shopping trip. In order to simulate that consumers are frequently distracted during shopping, they would see two additional products or two colored patterns on the screen.

In the nonshopping condition, the visual distraction task was introduced as a gender-role classification task without any reference to shopping. Participants were told that the study was intended to examine gender roles in combination with toys. They read a newspaper article on the topic and were asked to write a few sentences regarding their opinion. Then participants were informed that they would be asked to classify some toys while their eyes were being tracked. They were told they would see a toy marked with a frame, which would be the toy for which they should make their decision. In order to simulate that individuals are frequently distracted when making such decisions, they would see two additional products or two colored patterns on the screen.

In both conditions, participants were informed that the products would disappear from the screen after a few seconds. Then their task would be to decide whether the toy with the frame was a toy for a boy, for a girl, or for both. In addition, the instructions highlighted that the decision always referred to the toy with the frame and that participants should concentrate on this product.

Irrespective of the framing (shopping vs. nonshopping), the task was the same for all participants. The task consisted of 60 trials. Each trial started with a fixation cross in the center of the screen (1,000 ms). Three pictures were then simultaneously displayed: a focal product (toy with a frame) and two distractors. After 4,000 ms, the pictures disappeared from the screen, and participants had to decide whether the focal product was an adequate toy for a boy, for a girl, or for both.

In 30 trials (within-subjects condition: product distractors; Figure 1A), the two distractors were products: a nonfocal, but task-related product (another toy without frame), and a task-irrelevant, but attractive product (cosmetic product). In the other 30 trials (within-subjects condition: nonsemantic distractors; Figure 1B), the two distractors consisted of the nonsemantic patterns. Whether a trial showed products or nonsemantic patterns as distractors was randomized across the 60 trials. Participants completed eight training trials before the 60 main trials.

Stimuli were presented on a 22-inch monitor with a display resolution of $1{,}680 \times 1{,}050$ pixels. The size of the pictures was 200×200 pixels. The positions of the stimuli centers relative to the center of the display in (x, y) pixel format were (0, 200), (−200, −200), and (200, −200). Each picture was drawn randomly from its category and appeared in only one trial. The position of each stimulus type was randomized across the trials, and the presentation algorithm ensured that each of the possible combinations of stimulus type and position (Figure 1) appeared for the same number of trials.

Eye movements were recorded while participants performed the task using an SMI RED 500 remote eye tracker (Sensomotoric Instruments GmbH, Teltow, Germany) with a sampling rate of 250 Hz. Viewing distance was approximately 60 cm. The 200×200 pixel areas of the focal object (toy with frame) and of the two distractors (nonfocal toy and cosmetic product in the product distractor trials; two patterns in the nonsemantic distractor trials) were defined as separate areas of interest (AOI). As measure of the allocation of visual attention, we used percentage of dwell time on the three AOI that were presented during a trial (for descriptive statistics, see online supplement, which can be found at http://spps.sagepub.com/supplemental). This reflects the percentage of time a participant spent looking at one of the AOI and thus does not only indicate whether a stimulus catches attention but also how much visual attention a stimulus attracts. Furthermore, recent research has linked time spent looking on an option to choice (Atalay, Bodur, & Rasolofoarison, 2012).

For each participant, this measure was averaged across trials for the focal object (toy with frame) in the product distractor trials (Spearman–Brown corrected odd-even split-half reliability, $r = .92$) and in the nonsemantic distractor trials ($r = .91$), for the task-related distractor (toy; $r = .91$), and for the attractive distractor (cosmetics, $r = .87$). After participants completed all trials, we assessed participants' task enjoyment using 3 items ("the task was fun," "the task was interesting," and "the task was boring [reverse]"; $\alpha = .86$).[2]

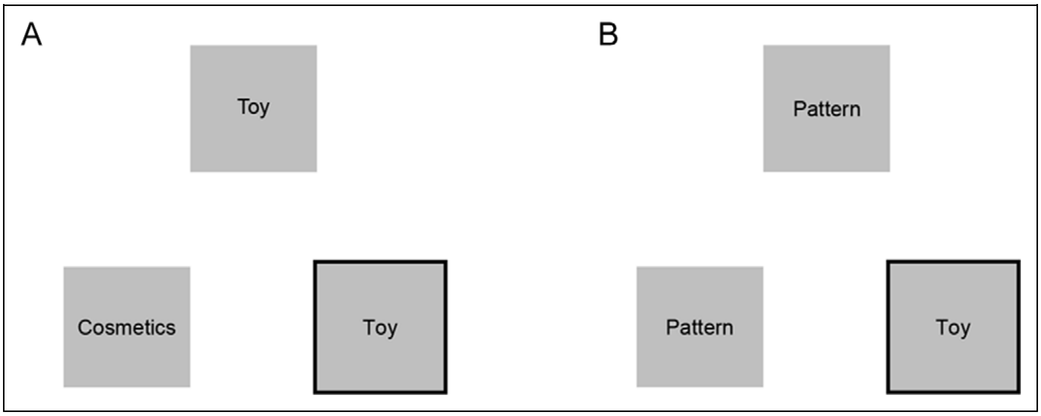

Figure 1. Schematic examples of the stimulus presentation with focal toy in the lower right corner during (A) a product distractor trial and (B) a nonsemantic distractor trial. Trial duration was 4,000 ms.

Results

Outliers

We removed three participants for being univariate outliers: two regarding dwell time on the focal product (>upper quartile + 1.5 × interquartile range) and one regarding dwell time on cosmetics (<lower quartile − 1.5 × interquartile range). We found no evidence for bivariate outliers (Mahalanobis distances). The final sample consisted of 52 participants (shopping context: $n = 27$, nonshopping context: $n = 25$).

Dwell Time on Focal Product

We had hypothesized that impulsive buyers would be less successful at shielding their focal goal from distracting stimuli. Thus, they should allocate less attention to the focal product. This should be reflected by less time spent dwelling on the focal product for impulsive buyers. The effect should disappear when the task is not framed as a shopping situation. Moreover, the effect should be more pronounced when the distractors are products compared to nonsemantic stimuli.

To examine these hypotheses, we used the percentage of dwell time spent on the focal product (toy with frame) as the dependent variable in a general linear model analysis (Robinson, 2007). Context (shopping vs. nonshopping) was a discrete between-subjects predictor, trial type (product vs. nonsemantic distractors) was a discrete within-subjects predictor, and buying impulsiveness (*z*-standardized) was a continuous between-subjects predictor. The significant effect of the trial type shows that participants spent less time looking on the focal product when the distractors were products ($M = 74.66\%$, $SD = 10.75$) than when the distractors were nonsemantic patterns ($M = 79.75\%$, $SD = 8.67$), $F(1, 48) = 64.17$, $p < .001$, $\eta^2 = .572$. In addition, the analysis yielded a significant Context × Buying Impulsiveness interaction, $F(1, 48) = 4.63$, $p = .036$, $\eta^2 = .088$. In line with our expectations, this was qualified by a significant Context × Trial Type × Buying Impulsiveness interaction, $F(1, 48) = 4.69$, $p = .035$, $\eta^2 = .089$. None of the other effects was significant, Fs < 1.36, ps > .25. We further analyzed the Context × Trial Type × Buying Impulsiveness interaction by testing separate Context × Buying Impulsiveness models for the product distractor trials and for the nonsemantic distractor trials, respectively.

In line with our expectations, the analysis of the product distractor trials yielded a significant Context × Buying Impulsiveness interaction, $F(1, 48) = 5.77$, $p = .020$, $\eta^2 = .107$; the other effects were not significant, Fs < 1.57, ps > .21. A simple slopes analysis of the Context × Buying Impulsiveness interaction supports our hypotheses (Figure 2A). In the shopping-context condition, buying impulsiveness was a significant predictor of dwell time on the focal product (toy with frame), $B = -5.40$, $SE = 2.06$, $\beta = -.47$, $t(25) = 2.63$, $p = .014$. Thus, the higher the buying impulsiveness, the less time the participants spent looking at the focal product. In the nonshopping context, by contrast, buying impulsiveness did not significantly predict dwell time on the focal product, $B = 1.70$, $SE = 2.06$, $\beta = .17$, $t < 1$, $p = .42$. Thus, impulsive buyers spent less time focusing on the focal product, but the effect emerged only when the task was framed as a shopping situation.

For the nonsemantic distractor trials, the Context × Buying Impulsiveness interaction was only marginally significant, $F(1, 48) = 2.99$, $p = .090$, $\eta^2 = .059$; other effects were not significant, Fs < 1. A simple slopes analysis of the Context × Buying Impulsiveness interaction showed a similar pattern of results as in the product distractor trials (Figure 2B). In the shopping-context condition, buying impulsiveness predicted dwell time on the focal product (toy with frame), but this effect was only marginally significant, $B = -3.34$, $SE = 1.84$, $\beta = -.34$, $t(25) = 1.82$, $p = .082$. In the nonshopping context, buying impulsiveness did not significantly predict dwell time on the focal product, $B = 0.91$, $SE = 1.61$, $\beta = .12$, $t < 1$, $p = .58$.

In sum, the results support the predicted effect of impulsive buying tendency on total dwell time: Impulsive buyers allocated less attention to the focal product than nonimpulsive buyers. The effect emerged only when the task was framed as a shopping situation. Furthermore, the effect was more

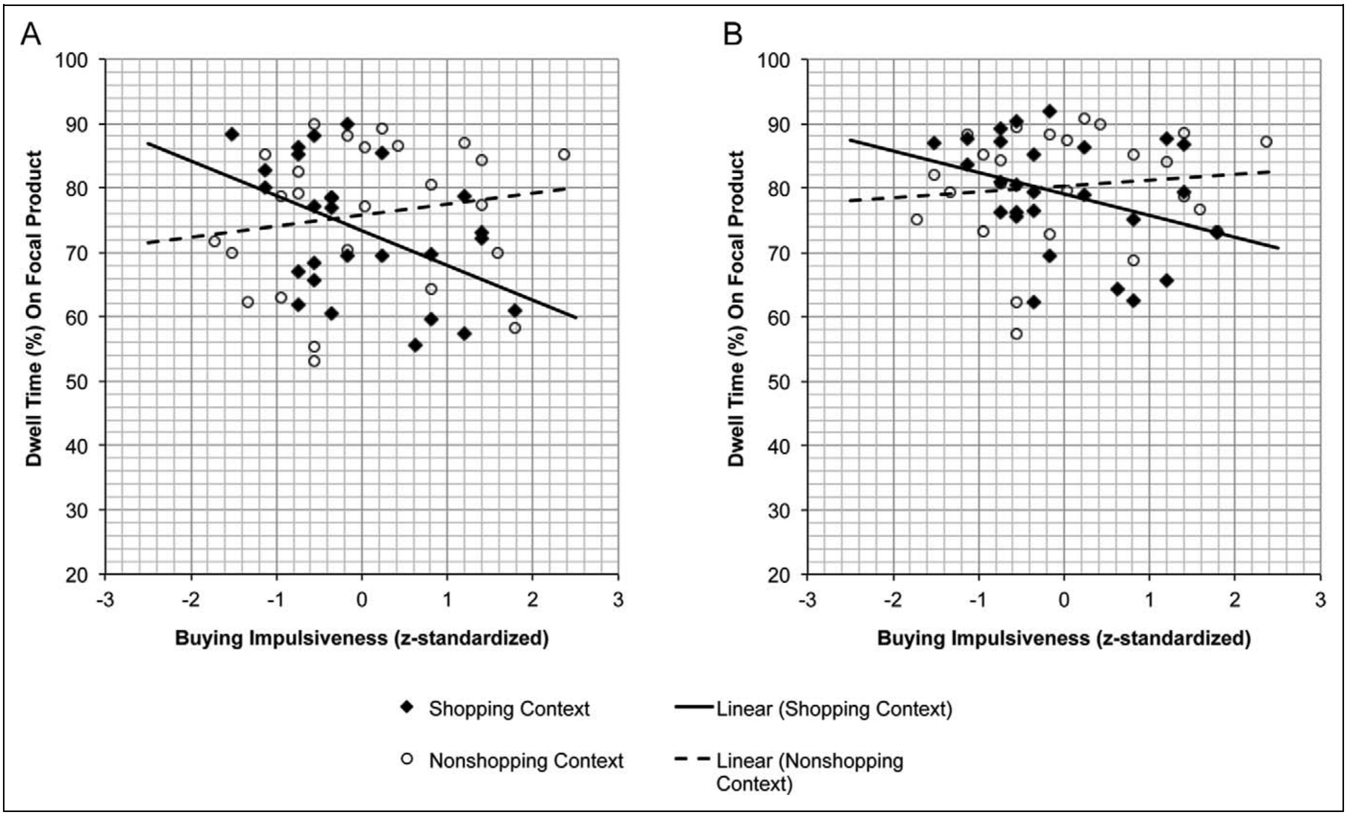

Figure 2. Simple slope regression lines for dwell time on the focal object predicted by buying impulsiveness and context in the (A) product distractor trials and in the (B) nonsemantic distractor trials.

pronounced when the distractors were products compared to nonsemantic distractors.

Dwell Time on Distractors

We had also hypothesized that distraction would be independent of product type. Thus, we examined whether product type moderated the relation between buying impulsiveness and dwell times on the distractor products in the product distractor trials. We used general linear model analysis with percentage of dwell times on both distractors—the attractive distractor (cosmetics) and the task-related distractor (nonfocal toy)—as dependent variables. Distractor type was a discrete within-subjects predictor. Context (shopping vs. nonshopping) was a discrete between-subjects factor, and buying impulsiveness (*z*-standardized) was a continuous between-subjects predictor. In line with our hypothesis, product type did not moderate the relation between buying impulsiveness and dwell times on the distracting products: Neither the Product Type × Buying Impulsiveness interaction, $F < 1$, $p = .87$, $\eta^2 = .001$, nor the Product Type × Buying Impulsiveness × Context interaction, $F(1, 48) = 1.72$, $p = .20$, $\eta^2 = .035$, was significant.

We examined whether the results for dwell time on the distracting products mirror the findings for dwell time on the focal product. We expected that the dwell time on both distractor products would be higher for impulsive buyers and that this effect would emerge only in the shopping situation. As the Context × Buying Impulsiveness interaction was significant, $F(1, 48) = 10.61$, $p = .002$, $\eta^2 = .181$, we examined this interaction with separate general linear model analyses for the shopping-context and the nonshopping-context conditions.

In the shopping-context condition, the Product Type × Buying Impulsiveness interaction was not significant, $F < 1$, $p = .47$, $\eta^2 = .021$. The main effect of buying impulsiveness was significant, $F(1, 25) = 8.47$, $p = .007$, $\eta^2 = .253$. Analyses of the simple slopes of both distractors (Figure 3A) showed that the higher the buying impulsiveness, the higher the dwell time on the attractive distractor product (cosmetics), $B = 1.84$, $SE = 0.69$, $\beta = .47$, $t(25) = 2.65$, $p = .014$, as well as on the task-relevant distractor product (nonfocal toy), $B = 2.09$, $SE = 0.70$, $\beta = .51$, $t(25) = 2.99$, $p = .006$.

In the nonshopping-context condition, the Product Type × Buying Impulsiveness interaction was not significant, $F(1, 48) = 1.39$, $p = .25$, $\eta^2 = .057$. The main effect of buying impulsiveness was not significant, $F(1, 23) = 2.73$, $p = .11$, $\eta^2 = .106$. Analyses of the simple slopes (Figure 3B) showed that the relationship between buying impulsiveness and dwell time on the distracting products was in the other direction than in the shopping-context condition; moreover, it was neither significant for the attractive product, $B = -0.83$, $SE = 0.51$, $\beta =$

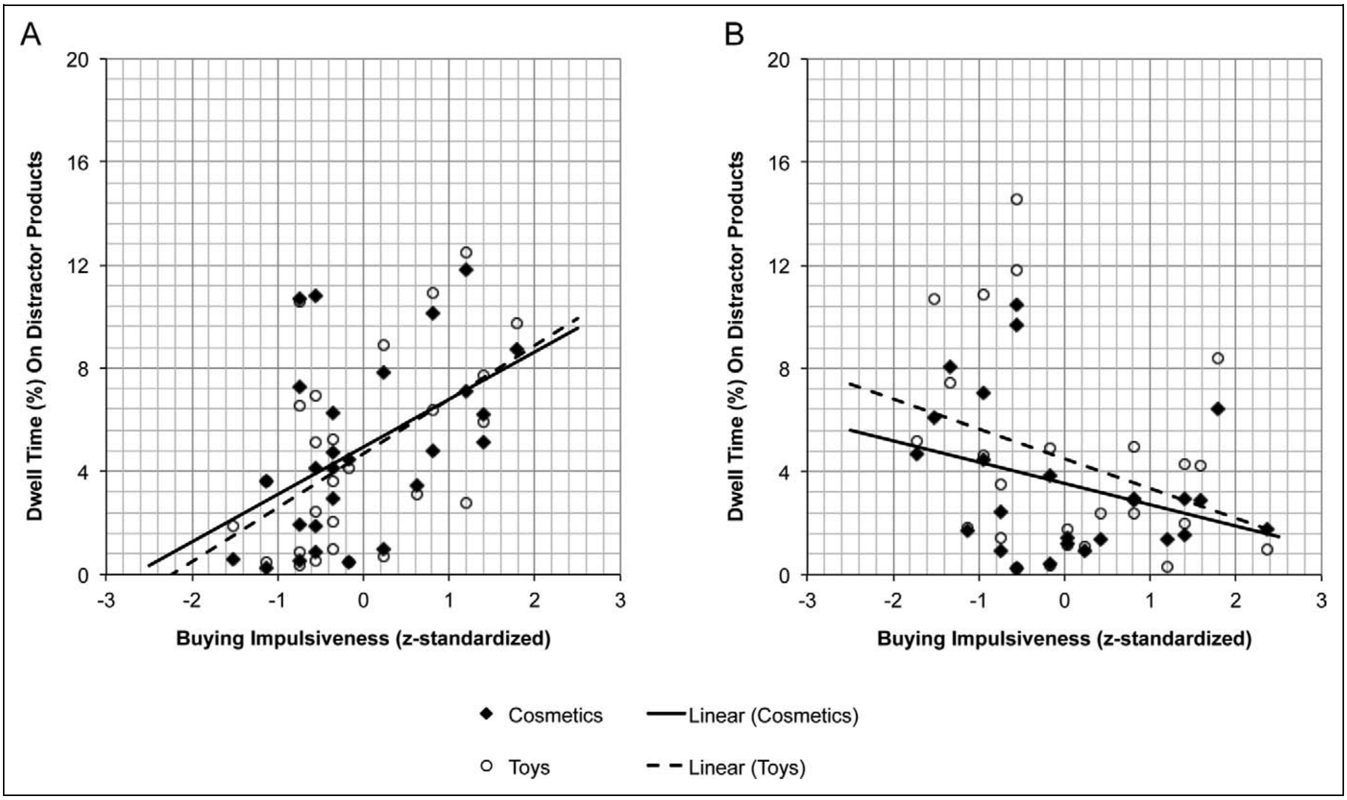

Figure 3. Simple slope regression lines for dwell time on distractor products predicted by buying impulsiveness and product type in the (A) shopping-context condition and in the (B) nonshopping-context condition (product distractor trials only).

$-.32$, $t(25) = 1.62$, $p = .12$, nor for the task-relevant product, $B = 1.15$, $SE = 0.70$, $\beta = -.32$, $t(25) = 1.64$, $p = .12$.

Hence, the findings on dwell times on the distractors mirror the findings on dwell time on the focal product: Impulsive buyers were more easily distracted than nonimpulsive buyers, but this applied only to the shopping context. Importantly, product type (attractive vs. task-related product) did not moderate this effect.

Task Enjoyment as Alternative Explanation

We addressed the possible alternative explanation that participants' eye movements reflect task enjoyment: One might argue that impulsive buyers would enjoy the task in the nonshopping context less than in the shopping context, which would lead to less exploratory behavior in the nonshopping context. Participants' ratings of task enjoyment, however, did not indicate that affective processes underlie the results. A general linear model with context (nonshopping vs. shopping) as discrete predictor and buying impulsiveness as continuous predictor, and with task enjoyment as dependent variable found that none of the effects was significant: neither the effect of context, $F(1, 48) = 1.17$, $p = .29$, $\eta^2 = .024$, buying impulsiveness, $F(1, 48) = 2.71$, $p = .11$, $\eta^2 = .053$, nor the interaction, $F < 1$, $p = .38$, $\eta^2 = .016$, was significant.[2]

Discussion

The present research examined whether impulsive buyers would show an attentional bias in shopping situations. We used a distraction paradigm in which consumers had to evaluate a focal product while two other distracting stimuli were presented. The results support our hypothesis that impulsive buyers are less successful in keeping their attention focused on a focal product in a shopping task: The higher the buying impulsiveness, the less attention the participants allocated to the focal product and the more attention they allocated to distracting products. These findings indicate that impulsive buyers were more easily distracted by other products that were presented together with the focal product.

Importantly, the effect occurred only when the task was framed as a shopping situation. This indicates that the higher distractibility is not a general characteristic of impulsive buyers' attentional processes, but that their attentional openmindedness is triggered only in shopping situations. In addition, attractive, typical impulse products (i.e., cosmetics) did not distract impulsive buyers more than rather neutral, but task-related products (i.e., the nonfocal toy). Given that the difference in effect sizes is negligible (cosmetics: $\beta = .47$; nonfocal toy: $\beta = .51$), we can rule out that low test power caused this nonsignificant finding. Taken together, the findings on context and product type indicate that the attentional bias is not driven by impulsive buyers' interest in the products per se, but only when they are in the right context (i.e., shopping).

We could rule out task enjoyment as an alternative explanation of the higher distractibility of impulsive buyers. Moreover, the findings imply that the attentional bias does not reflect a general open-mindedness toward any visual stimuli but is restricted to stimuli that are related to shopping (i.e., products). Impulsive buyers were significantly less distracted when the distractors were nonsemantic patterns than when the distractors were products. As the effect was marginally significant at $p <$ .10 in the nonsemantic distractor trials, we do not argue that the effect disappeared completely. This relationship in the nonsemantic distractor trials, however, might be attributed to the within-subjects design: Participants did not know in advance whether the distractors would be products or patterns, which may have contributed to the increased distractibility in both conditions. Importantly, both effects only occurred in the shopping context conditions, and the effect was significantly more pronounced in the product distractor trials than in the nonsemantic distractor trials.

Two limitations of the study should be noted. First, with $N =$ 52, sample size is rather modest. Second, because men and women differ in the product categories that they purchase on impulse (Dittmar, Beattie, & Friese, 1996), the study was restricted to female participants and used cosmetics as attractive distractors.

The present research is the first to examine the attentional processes that underlie impulsive buying. We addressed one component of self-control: shielding one's focal goal from distracting stimuli. Overall, the results support our proposition that consumers with a tendency toward impulsive buying are less able to shield themselves against distracting stimuli in the shopping environment. The attentional bias suggests that impulsive buyers are more prone to unwanted purchasing not only because they experience more desire or possess less willpower: Because of their openness in attention, they may discover more products that trigger a purchase episode, even when they try to control their shopping. Simply put, impulsive buyers may buy more products because they see more products. Thus, the attentional bias can be assumed to contribute to the persistence of impulsive buying (cf. Waters et al., 2003). Interestingly, we found the attentional bias in a situation in which consumers followed a particular task that required them to focus on a product and to disregard distracting stimuli. Thus, we expect that this attentional openness would be even more pronounced in situations in which consumers go browsing compared to when they have a particular shopping goal.

An important finding of the present research is that a distracting stimulus drew attention only when the situation was framed as a situation that put the stimulus in the right context (i.e., shopping). This has two major implications. First, it underlines that buying impulsiveness is a useful domain-specific construct. Second, the findings contribute to the general literature on impulsive behavior regarding the question whether impulsivity and self-control are domain-specific or domain-general (Billieux, Rochat, Rebetez, & Van der Linden, 2008; Tsukayama, Duckworth, & Kim, 2012). If a general lack of self-control ability would be the major source of impulsive buyers' higher distractibility, the effect would have also occurred in the nonshopping context. Thus, our results underline that impulsivity and self-control problems have a strong domain-specific component, and thus complement findings that are based on self-report data (Tsukayama et al., 2012) by physiological data (i.e., eye tracking).

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Declaration of Conflicting Interests

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Notes

1. As the study was conducted within a larger project on impulse purchasing and overspending, a number of additional variables related to shopping and self-control were collected in this questionnaire that are not relevant for the study reported here (e.g., shopping orientation: Büttner, Florack, & Göritz, in press; self-control: Bertrams & Dickhäuser, 2009). Although we collected a number of measures of compulsive and impulsive buying (Mueller et al., 2010; Raab, Neuner, Reisch, & Scherhorn, 2005; Ridgway et al., 2008; Rook & Fisher, 1995), we decided a priori to report only the analyses based on the measure with the best psychometric properties in terms of Cronbach's α and distributional quality (skewness and outliers), which turned out to be the Buying Impulsiveness scale (Rook & Fisher, 1995). Details are available from the first author.
2. The questionnaire also included further control variables: mood (Steyer, Schwenkmezger, Notz, & Eid, 1994), task engagement, perceived task difficulty, and product involvement (cosmetics and toys). None of these variables correlated with any of the dependent variables. Thus, they were not analyzed further. Details are available from the first author.

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