HOW AND WHEN PERSONALIZED ADVERTISING LEADS TO BRAND ATTITUDE, CLICK AND WOM INTENTION

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Abstract

We study the effect of perceived personalization in advertising on social networking sites (SNS) on consumer brand responses. In Study 1 (N=202), we test a parallel mediation via perceived personal relevance and intrusiveness on brand attitude (Ab), and click intention (CI). Perceived personalization improves Ab and CI by increasing the perceived personal relevance and, unexpectedly, by decreasing the perceived intrusiveness of the ad. Study 2 (N = 264) extends the processing mechanism of personalized advertising by additionally including the mediating effects of self-brand connection and reactance toward the ad. Perceived personalization has a positive indirect effect on self-brand connection via perceived personal relevance, but not via perceived intrusiveness. Self-brand connection, in turn, has a positive effect on consumers' responses. Contrary to expectations reactance does not significantly affect brand responses. Study 2 also examines the moderating role of perceived privacy protection by the SNS. Higher levels of perceived privacy protection by the SNS do not strengthen the indirect effects of perceived personalization.

Keywords: consumer response to ads; social media

Social media have taken on a central role in many people's lives: in January 2020, there were 3.8 billion social media users (Kemp, 2020). The popularity of social media makes them attractive platforms for advertisers. For example, Facebook, the most popular social networking site, reported almost 70 billion dollars in advertising revenue in 2019, up from 50 billion in 2018 (Facebook Inc., 2020). These platforms offer rich data to personalize advertising (Voorveld, 2019). Personalization of advertising can increase the perceived personal relevance of an ad and lead to more positive outcomes (De Keyzer, Dens and De Pelsmacker, 2015, Walrave et al., 2016), but it can also lead to feelings of intrusiveness (Pfiffelmann, Dens and Soulez, 2020). Nevertheless, according to Boerman, Kruikemeier and Zuiderveen Borgesius (2017), the underlying processes of the effects of personalized advertising and its boundary conditions remain unclear. Without an understanding of these effects, using personalized advertising on social media remains a process of trial-and-error.

First, the current study aims to look into the relative importance of perceived relevance and perceived intrusiveness as a result of advertising personalization to affect brand responses Previous research has studied the roles of perceived relevance and perceived intrusiveness separately (e.g., De Keyzer, Dens and De Pelsmacker, 2015, Pfiffelmann, Dens and Soulez, 2020). Business Insider (2020) reports that, in general, consumers find advertisements on Facebook equally relevant as annoying. As such, these two processes seem to be active at the same time. However, to our knowledge, no studies have examined the effects of both variables concurrently, even though it is important to understand how both affect consumers at the same time and which one takes the upper hand in consumers' responses. Our first contribution is that we test the mediating effects of perceived personal relevance and intrusiveness simultaneously, to assess their relative importance in explaining the effect of advertising personalization on brand attitude, click intention (Study 1 and 2), and positive word-of-mouth (WOM) intention (Study 2).

Second, we aim to further explore the processing mechanism of personalized advertising. Self-brand connection and reactance to the advertisement are added in parallel as second-order serial mediators (Study 2). Self-brand connection is the connection consumers establish between their self-concept and the identified brand meaning and its benefits (Liu and Mattila, 2017). This connection results in more positive responses toward the brand (Escalas and Bettman, 2003, Palazon, Delgado-Ballester and Sicilia, 2018). Reactance to the advertisement, on the other hand, refers to a (negative) psychological response consumers might experience in response to advertisements they consider as irrelevant or intrusive and in which they perceive their freedom as being threatened (Brehm, 1966, White et al., 2008). Reactance may lead consumers to ignoring the ad or to developing negative responses (van Doorn and Hoekstra, 2013, White et al., 2008, Youn and Kim, 2019). By adding these mediators, which have largely been overlooked in the literature on advertising personalization, our second contribution is to provide a more exhaustive understanding of both the positive and the adverse personalization effects found in previous research.

Third, Business Insider (2020) reports that digital trust is an important factor to take into account because social media users say it impacts their engagement with branded content on social media. In a DRG and Finecast (2020, p. 23) whitepaper, it is articulated as "Personalized advertising is seen as a double-edged sword; it presents the opportunity to reach consumers one-to-one and drive short-term activation, but trust is a key issue." The data leak scandals about Facebook (Lapowsky, 2018) seem to have affected users' trust as Facebook was the least trusted social medium on the list (Business Insider, 2020). Moreover, the privacy calculus theory suggests that consumers disclose personal information based on a cost-benefit trade-off (Laufer and Wolfe, 1977). Previous studies have shown that the privacy calculus does not only affect disclosure of personal information but also attitudes toward the advertiser (De Keyzer, Kruikemeier and van Noort, 2019, Demmers, van Dolen and Weltevreden, 2018). Our third

contribution is therefore to examine the moderating impact of perceived privacy protection by the social networking site on the effect of perceived personalization on consumers' responses.

Finally, the current study focuses on the effects of perceived rather than actual advertising personalization. Previous research has indicated that, in order for advertising personalization to affect customers' responses, they need to perceive an advertisement as personalized (Li, 2016). As such, to be able to validly assess the effects of personalization, we need to focus on the customers' personalization perceptions. Previous research has provided indications on which personalization elements contribute to the perception of personalization. For example, De Keyzer, Dens and De Pelsmacker (2019) showed that using interests, location and age are important determinants of perceived personalization. However, they also indicated that location is considered an annoying personalization element, which advertisers should use with care. Maslowska, Smit and van den Putte (2016) showed that using an identification personalization strategy (e.g., by using one's name) increases the perception of personalization and so does a combination of personalization strategies. They also showed that these two strategies lead to further persuasion effects (e.g., increased attention, attitudes, and behavioral intentions). In the current study, we use these insights to create perceived personalization. However, studying the effects of different types of actual personalization elements is not the focus of the present study.

In two studies we aim to contribute to theory by developing an understanding of the advertising personalization processing mechanism and the conditions under which personalized advertising leads to positive or negative consumer responses. More specifically, the processing mechanisms are built upon congruity theory, self-referencing theory, reactance theory, commitment-trust theory, and protection-motivation theory. Advertising practitioners may use the insights of our two studies to enhance the brand attitude of their prospective customers and stimulate consumer brand engagement by personalizing advertisements in an effective way.

STUDY 1

Literature Review and Hypotheses

Personalized advertising is advertising tailored to an individual's characteristics and/or interests or tastes, for example, based on information from social media (Walrave et al., 2016). Previous research shows that personalization can improve advertising effectiveness as consumers generally perceive advertising that uses information about themselves as more personally relevant (e.g., De Keyzer, Dens and De Pelsmacker, 2015, Walrave et al., 2016). Indeed, congruity theory suggests that an advertisement that is congruent with a consumers' self-concept, such as an advertisement that is perceived as personalized, increases the perceived relevance of the advertisement (Dodoo and Wen, 2019, Heckler and Childers, 1992). Furthermore, the extent to which a consumer relates information to himself (self-referencing theory) positively influences attitudes (Hawkins et al., 2008). Self-referencing serves as a decision aid or a heuristic cue (Tam and Ho, 2006) or could motivate readers to process the personalized message further and thus lead to more considerable attention, elaboration, message processing, and ultimately persuasion (Bright and Daugherty, 2012, Tam and Ho, 2005). According to Kelly, Kerr and Drennan (2010), a lack of perceived personal relevance is the leading cause of advertising avoidance in social networking sites (SNSs). Relevance thus seems an essential condition for persuasion in online SNSs. Therefore, we hypothesize:

H1: Consumers who perceive an advertisement on a social networking site as more personalized will perceive the advertisement as more personally relevant. As a result of an increased personal relevance they will have a more positive a) brand attitude and b) click intention.
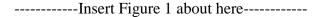
Although personalized advertising may have a positive impact on consumer responses by increasing its perceived personal relevance, it might also be perceived as more intrusive (Li,

Edwards and Lee, 2002), which could prevent consumers from processing the ad (Morimoto and Chang, 2006). Intrusiveness is "a psychological reaction to ads that interferes with a consumer's ongoing cognitive processing" (Li, Edwards and Lee, 2002, p. 39). In the context of social media, Youn and Kim (2019) argue that advertisements can be perceived as intrusive because they disrupt a user's goals of using the social medium. Drawing on reactance theory (Brehm, 1966), White et al. (2008) find that more personalization may increase perceived intrusiveness, especially when there is no legitimate reason for the use of personal information. As such, messages that are too personal would be considered intrusive which would in turn lead to negative effects, such as irritation, negative cognitions, or avoidance (Li, Edwards and Lee, 2002, Youn and Kim, 2019). These messages decrease a consumer's sense of freedom in using the social medium, which explains the negative consumer responses. Indeed, Pfiffelmann, Dens and Soulez (2020) documented that advertising on LinkedIn that uses more personal data increases feelings of intrusiveness, which negatively affects purchase intentions. We therefore expect:

H2: Consumers who perceive an advertisement on a social networking site as more personalized will perceive the advertisement as more intrusive. As a result of increased perceived intrusiveness, they will have a more negative a) brand attitude and b) click intention.

Both mediating effects of relevance and intrusiveness have been found separately in prior research. However, studies related to personalized advertising in social media have failed to address the relative strength of the increase in perceived personal relevance and intrusiveness, and hence also brand attitudes, triggered by personalization (van Doorn and Hoekstra, 2013). The privacy calculus model suggests that the extent to which people exercise privacy practices is based on a cost-benefit trade-off (Chen, 2018). While privacy calculus is mainly used to explain people's behavior in disclosing information online or privacy-protecting behaviors (e.g., Dienlin and Metzger, 2016), parallels can be drawn to their responses to personalized

advertising (Demmers, van Dolen and Weltevreden, 2018). Receiving more relevant content and advertisements is one benefit of disclosing information. At the same time, the intrusiveness of ads using personal data could be considered a cost. In determining their overall evaluation of a personalized ad, people will consider whether the benefits outweigh the costs. Although the privacy calculus describes the weighing of benefits and costs, it does not prescribe whether one effect should be greater than the other. Nevertheless, White et al. (2008) suggest that when messages are perceived as appropriate by consumers, reactance to these messages might be mitigated and therefore improve consumers' responses. Moreover, based on congruity theory, we can expect that consumers are more responsive to messages that are consistent with themselves (in terms of attitudes, beliefs, etc.) (Dodoo and Wen, 2019, Winter, Maslowska and Vos, 2021). Therefore, when exposed to advertisements that are perceived as personalized, and thus self-congruent, the positive effects through perceived relevance might outweigh the negative effects of perceived intrusiveness on consumers' responses.

H3: The relative strength of the indirect effect of perceived advertising personalization on a)brand attitude and b) click intention through perceived relevance will be stronger than the indirect effect through perceived intrusiveness.

------------Insert Figure 1 about here------------

Study Design and Procedure

To test our conceptual framework (Figure 1), we set up a between-subjects design with four conditions (control condition, age-based personalization, gender-based personalization, interest-based personalization; see Appendix A for an example). The independent variable is perceived personalization. As argued before, in order to effectively study the effects of personalized advertisements it is necessary to explore perceived personalization. To avoid that the findings would be dependent on a specific personalization element (and as such the findings

would not be generalizable over other personalization elements), we used several forms of (actual) personalization to increase the variance in perceived personalization. De Keyzer, Dens and De Pelsmacker (2019) found that gender, age, and interests are all useful personalization elements to elicit perceived personalization. In the non-personalized condition, the tagline was generic: 'Lovely Travel, discover why others were enchanted by this travel agency!'. In the personalized conditions, either participants' gender ('Lovely Travel, discover why other [women/ men] were enchanted by this travel agency!'), age ('Lovely Travel, discover why others in their [twenties/ thirties/ forties/ fifties/ sixties] were enchanted by this travel agency!') or interests ('Lovely Travel, discover why others who are interested in [cycling/ nature/ walking/ going out/ skiing/ wellness/ shopping/ culture] were enchanted by this travel agency!') were inserted in the tagline based on the information the participants provided at the start of the questionnaire (see below). As already mentioned in the introduction, we do not want to study the effects of actual personalization cues. We focused on Facebook because it is the most popular social networking site today in terms of users (Statista Inc., 2020). We created a mock Facebook newsfeed containing a mock profile picture update (a nature scene) as filler, followed by a native advertisement for a fictitious travel agency ('Lovely Travel'). The newsfeed and advertisement were developed to resemble the real Facebook environment to enhance the external validity of the study. The organization was fictitious to avoid possible confounds due to prior experience. Personalization was manipulated through the tagline. The ads were otherwise identical across conditions.

Participants (N = 202, 62.9% between 20 and 29 years, 29.7% male) were recruited via a Facebook snowball sample. They were randomly assigned to one of the four conditions and could proceed through the questionnaire at their own pace. The questionnaire started with a welcome screen in which participants' anonymity was ensured. Participants had to indicate their gender, age, and interests from a list (cycling, nature, walking, going out, skiing, wellness,

shopping, and culture). This information was used to manipulate the personalization of the advertisements. Participants then reported how much time they spent on Facebook on a regular day. Most participants spent less than one hour (82.3%). They were instructed to attentively look at the mock Facebook newsfeed (containing one of the four advertisements) as if it was their own. Next, participants rated the perceived degree of personalization, adapted from Srinivasan, Anderson and Ponnavolu (2002) and Kalyanaraman and Sundar (2006), perceived personal relevance, from De Keyzer, Dens and De Pelsmacker (2015), and perceived intrusiveness, from Li, Edwards and Lee (2002), of the advertisement on five-point Likert scales or bipolar semantic differentials. Finally, participants rated their brand attitude on a five-point bipolar semantic differential from Srinivasan, Anderson and Ponnavolu (2002) and their click intention on a 5-point Likert scale. Table 1 provides an overview of the different measures.

------------Insert Table 1 about here------------

Results

The main goal of using personalized stimuli (with varying personalization elements) was to create variance in the perceived personalization measure of the personalized conditions. Since the overall mean was 3.130 and, more importantly, the overall standard deviation was .879, our goal was achieved.

We used Hayes' (2013) PROCESS macro (Model 4) with 5,000 bootstrap samples to test hypotheses 1, 2, and 3 (see Table 2). Perceived personalization was the independent variable. Perceived personal relevance and perceived intrusiveness were entered as mediating variables. We ran two distinct analyses, one with brand attitude and one with click intention as the dependent. Next to the direct effects, we report the completely standardized indirect effects (for a complete discussion, see Hayes, 2018).

------------Insert Table 2 about here------------

Perceived personalization has a significant positive effect on perceived personal relevance (b = .465, p < .001). In turn, perceived personal relevance has a significant positive effect on brand attitude (b = .279, p < .001), and click intention (b = .489, <.001). Therefore, the indirect effects of perceived personalization on brand attitude (b = .187, CI [.100; .285], and click intention (b = .175, CI [.100; .270] via perceived personal relevance are positive and significant, confirming H1. Perceived personalization has a significant negative effect on perceived intrusiveness (b = -.183, p = .009). Perceived intrusiveness, in turn, has a significant negative effect on brand attitude (b = -.187, p = .002), and click intention (b = -.264, p = .004). H2 is not supported because the effect of perceived personalization is in the opposite direction as expected. As a result, the indirect effects of perceived personalization on brand attitude (b = .049, CI [.009; .101]), and click intention (b = .037, CI [.006; .080] via perceived intrusiveness are positive and significant. The pairwise comparisons of the indirect effects show that the indirect effect on both brand attitude ($b_{relevance} - b_{intrusiveness}$ = .138, [CI: .036; .246]), and click intention (b = .138, CI [.055; .232] via perceived personal relevance is significantly stronger than the indirect effect through perceived intrusiveness. Therefore, H3 is confirmed.

Discussion

Study 1 confirms earlier findings on the importance of perceived personal relevance (e.g., De Keyzer, Dens and De Pelsmacker, 2015, Kalyanaraman and Sundar, 2006). With increasing levels of perceived personalization, perceived personal relevance also increases, leading to a more positive brand attitude, and click intention. In line with previous research (White et al., 2008, Youn and Kim, 2019), we expected that using perceived personalization would also increase the perceived intrusiveness of the ad. However, our results indicate the opposite: The more an advertisement is perceived as personalized, the less it is experienced as intrusive. Pfiffelmann, Dens and Soulez (2020) already found that personalization did not exert a direct effect on perceived ad intrusiveness. However, they did find an indirect effect through visual

attention: personalization increased visual attention which in turn led to a higher level of perceived intrusiveness. As such, the negative effect of personalization can be attributed to an interruption of the users' experience with the platform. In their study, personalization was achieved by using highly idiosyncratic information (i.e., the first name and personal photograph of the participants). Our study used more general information, such as participants' age, gender, or interests, to manipulate the perception of personalization.

Another possible explanation for the negative effect of personalization on intrusiveness could be that personalized advertisements offer more valuable information than non-personalized advertisements and may, therefore, be less unwanted. For example, Kim and Han (2014) found that personalized mobile advertisements are negatively related to perceived irritation (a concept related to intrusiveness): higher personalization levels correspond to lower perceived irritation. An explanation for this might be found in schema congruity theory (Meyers-Levy and Tybout, 1989). This theory suggests that schema-congruent stimuli are predictable and easily processed. As such, personalized advertisements that are congruent with a consumers' schema (both on self-image and user experience) are processed more easily. Findings of Edwards, Li and Lee (2005) show that advertisements that are congruent with the website content are perceived as less intrusive than incongruent ads. This can also be applied to personalized advertisements: personalized advertisements are expected to be more congruent with a consumers' schema which in turn decreases the perceived intrusiveness of a personalized advertisement. This is also what Hühn et al. (2017) suggest with regard to location-based advertising: a location congruent advertisement could lower the interference with the cognitive process by taking the context into account. However, they could not confirm their hypothesis. The development of hypotheses for Study 2 (see hereafter) builds upon the positive indirect effect of perceived personalization through perceived intrusiveness on consumers' responses.

The principle aim of Study 2 is twofold: extend Study 1 by testing a refined model of the processing mechanism of personalized ads and explore a boundary condition of effects found in Study 1. We extend the processing mechanism through which perceived personalization operates by adding two second-order mediating variables, namely self-brand connection, and reactance to the advertisement (see Figure 2). Study 2 also adds positive word-of-mouth as another behavior-oriented dependent variable, next to click intention (and brand attitude). Positive word-of-mouth intention represents viral marketing intentions (Chang, Yu and Lu, 2015). Click intention is vital because in online advertising in general, and SNS advertising in particular, pay-per-click (PPC) billing has become standard practice (Asdemir, Kumar and Jacob, 2012).

Second, in Study 2 we test a boundary condition of the mediating effects of relevance and intrusiveness. We propose that consumers' perceived privacy protection by the social networking site moderates responses to personalized advertising. Study 1 is based on a fairly young sample. The experience with and the appreciation of personalized advertising may differ between young adults and older age groups. Young adults are typically heavy social media users (West, 2019). Van den Broeck, Poels and Walrave (2015) found that older respondents express more privacy concerns than younger people. Yet they modify privacy settings less frequently than the younger age groups. In order to test the moderating effects of people's perceived privacy protection by the social networking site, Study 2 recruits a more representative sample of social media users.

Finally, even though the perceived personalization in Study 1 leads to a standard deviation of .879, in Study 2 we want to check the robustness of the results obtained in Study 1 by manipulating more diverse and "extreme" perceptions of personalization. As suggested by (De Keyzer, Dens and De Pelsmacker, 2019), we combine personalization elements in a single

advertisement because it is expected that this would induce stronger perceptions of personalization.

STUDY 2

Extending the Mechanism

The second contribution of this paper lies in the extension of the processing mechanism of personalized advertising. We add two second-order mediators to the processing mechanism. The first second-order mediator is self-brand connection, which refers to the connection consumers establish between themselves and the brand (Liu and Mattila, 2017). The second second-order mediator is reactance to the advertisement, which refers to the psychological reactance that can occur when encountering an advertisement (White et al., 2008).

------------Insert Figure 2 about here------------

The Mediating Role of Self-Brand Connection

For each consumer brands consist of a complex set of associations that reflects the brands' attributes and benefits (Okazaki and Taylor, 2013). Self-brand connection refers to the match between consumers' self-concept (actual and ideal self) and the brand associations that a consumer has (Liu and Mattila, 2017). The process of self-brand connection follows two steps. First, the advertising message is processed and the brand meaning and benefits are identified. Next, consumers try to match their self-concept with the identified brand meaning and benefits (Liu and Mattila, 2017). Escalas (2004) argues that a brand might be used to fulfill psychological needs. Because personalized advertising addresses the consumer based on his needs and interests, the advertising message and the embedded brand will more likely be perceived as matching their own self-concept.

Perceived personal relevance might positively affect self-brand connection as a result of perceived personalization. As mentioned before, congruity theory suggests that ads that are self-

congruent increase perceived relevance of the advertisements (Heckler and Childers, 1992). Indeed, this is confirmed by the findings of Study 1. Consumers might not only see this congruity between themselves and the advertisement, but they might transfer this congruence to the brand in the advertisement. After all, when being confronted with personalized advertising, a consumer will try to relate the information in the advertisement to himself (Hawkins et al., 2008). This self-referencing will increase the likelihood that a consumer can match the brand to his self-concept and therefore increase the likelihood to build a self-brand connection. We expect:

H4: Consumers who perceive an advertisement on a social networking site as more personalized will perceive the advertisement as more personally relevant. As a result, they will have a stronger self-brand connection via the mediating role of perceived personal relevance.

A second path via which perceived personalization might affect self-brand connection is via *perceived intrusiveness*. The findings of Study 1 already suggested that perceived personalization decreases perceived intrusiveness. In the discussion following Study 1, we suggested that congruity between a consumer's schema and the personalized advertisement might be positive for consumer responses based on the schema theory (Meyers-Levy and Tybout, 1989). The same could be expected for self-brand connection: due to the fact that personalization reduces the perceived intrusiveness, the consumer can more easily process the message and as such can more easily see the connection between the self and the information shown in the advertisement Therefore, we expect:

H5: Consumers who perceive an advertisement on a social networking site as more personalized will perceive the advertisement as less intrusive. As a result, they will have a stronger self-brand connection.

Consumers construct their own self-concept by purchasing brands and, as such, by forming self-brand connections (Escalas and Bettman, 2003) Advertising can provide consumers with brands that can help build and adopt their self-concept (McCracken, 1986). When there is congruity between the advertised brand and the consumer's self-concept, this so-called self-brand connection should benefit brand responses (Sirgy, 1986). Liu and Mattila (2017) posit that the match between the brand and the consumer's self-concept affects consumers' behavioral intentions. There is ample research documenting that consumers are more likely to respond positively toward a brand they feel connected to and that addresses their psychological needs (Escalas and Bettman, 2003, Moons, De Pelsmacker and Barbarossa, 2020). Therefore, we expect:

H6: Consumers who have a stronger self-brand connection will have a more positive a) brand attitude, b) word-of-mouth intention, and c) click intention.

The Mediating Role of Reactance to the Advertisement

Personalized advertising may also become too personal and may trigger psychological reactance from consumers, which is a state in which a person feels his freedom is threatened (Brehm, 1966, White et al., 2008). According to reactance theory, when confronted with a personalized advertisement, the consumer will try to restore his freedom either passively, by ignoring the advertisement, or actively, by behaving oppositely to what is intended by the advertiser (Brehm, 1966, White et al., 2008). For example, White et al. (2008) show that reactance to the advertisement decreases click-intention. Previous research has found that consumers try to resist advertisements that are too personalized and will respond negatively to it (De Keyzer, Kruikemeier and van Noort, 2019, van Doorn and Hoekstra, 2013).

Perceived personal relevance might help to explain the link between personalized advertising and reactance to the advertisement. Personalized advertising can increase perceived personal

relevance and as such, can decrease reactance to the advertisement due to its perceived utility. White et al. (2008) found that when an advertisement is perceived as useful for a consumer, consumers do welcome personalized messages, and as such their advertisement avoidance decreases. We expect:

H7: Consumers who perceive an advertisement on a social networking site as more personalized will perceived the advertisement as more personally relevant. As a result, they will express less reactance toward the advertisement.

Based on reactance theory (Brehm, 1966) it is expected that a more intrusive advertisement would lead to more reactance towards this advertisement as it interrupts a consumers' freedom. The consumer has a specific goal when using the social networking site, and, due to the advertisement, is no longer free to pursue that specific goal. As such, forced exposure to advertisements might lead to reactance towards that advertisement (Edwards, Li and Lee, 2013). However, in study 1, we found that perceived personalization decreases *perceived intrusiveness*. The decrease in intrusiveness will also decrease reactance to the advertisement and consumers will less likely behave opposite to what was intended. Indeed, Edwards, Li and Lee (2013) already indicated that not all advertising is intrusive and unwelcome. Therefore, not all advertising necessarily leads to reactance. We expect:

H8: Consumers who perceive an advertisement on a social networking site as more personalized will perceive the advertisement as less intrusive. As a result, they will express less reactance toward the advertisement.

As mentioned before, reactance theory suggests that consumers do not want to be manipulated and want to maintain their freedom. As such, they try to resist persuasion attempts, such as advertising, when confronted with them (Boerman and Kruikemeier, 2016). They may ignore

the personalized ads, they may reject the ads or they might even try to find ways to block advertisement (Brinson, Eastin and Cicchirillo, 2018). Therefore, we expect:

H9: Consumers who have a stronger reactance toward the advertisement will have a more negative a) brand attitude, b) word-of-mouth intention, and c) click intention.

The Moderating Role of Perceived Privacy Protection by the Social Networking Site

Based on the commitment-trust theory (Morgan and Hunt, 1994) Mukherjee and Nath (2007) established that privacy and security features of a website are key antecedents of trust. Moreover, actions creating trust, such as privacy protection measures and transparency, can lead to a higher acceptance of online advertising personalization (Li and Unger, 2012). Tucker (2014) showed that enhancing users' perceived control over their privacy makes them nearly twice as likely to click on personalized ads. Perceived privacy control has a positive influence on their perceptions about the ad (Mpinganjira and Maduku, 2019). When users are confident that their privacy is protected, they may appreciate personalized ads more. This appreciation could result in a boost of the perceived relevance of personalized advertising. They may also value the perceived relevance more profoundly, leading to a more positive effect of perceived relevance on brand responses. Therefore, we expect:

H10: The negative effect of perceived personalization via perceived personal relevance on reactance toward the advertisement is stronger when users' perceived privacy protection by the social networking site is higher.

At the same time, negative perceptions of privacy protection could enhance the role of perceived intrusiveness of personalized advertising. Consumers are more willing to be profiled for personalized advertising when they perceive a company's privacy management policies as effective (Awad and Krishnan, 2006). They are likely to feel more reassured that they could explicitly prevent the use of unwarranted information and would, therefore, experience the

personalized ads as less intrusive. Consumers lacking knowledge about a company's privacy policies will already be reluctant to provide more personal information (Li and Unger, 2012). When this information is then used in a personalized advertisement, this may be deeply disturbing. Tucker (2014) found that personalization was relatively more effective for personalized ads that used unusual information after perceptions of privacy control were enhanced. Therefore, we expect:

H11: The positive effect of perceived personalization via perceived intrusiveness on reactance toward the advertisement is stronger when users' perceived privacy protection by the social networking site is higher.

According to the protection motivation theory (Rogers, 1983), privacy controls can reduce consumer reactance. When individuals are confronted with a threatening situation, in this case a potential privacy invasion, the protection motivation theory posits that they will evaluate the situation based on two cognitive responses: perceived threat and perceived efficacy in order to fend off the potential threat. When an individual perceives a situation as highly threatening and, at the same time, has the perception that he can effectively fend off the threat then that individual has a higher protection motivation. Moreover, the perception of efficacy can reduce the perception of a severe threat. By stimulating both privacy protection behaviors by the users (Chen, Beaudoin and Hong, 2016) and by the social networking site (Tucker, 2014), individuals could perceive a higher perceived efficacy. As such, giving control over privacy settings seems essential to reduce perceived threats, and, subsequent reactance (Feng and Xie, 2019). Furthermore, Mpinganjira and Maduku (2019) further argue that, by enhancing trust, privacy policies can reduce the negative consequences of perceived ad intrusiveness on brand attitude and intention). As such, it can be expected that increasing the perception of privacy protection by the social networking site, could reduce reactance towards the advertisement. Therefore, we expect that:

H12: The negative effect of reactance toward the advertisement on a) brand attitude, b) positive word-of-mouth, and c) click intention is weaker when users' perceived privacy protection by the social networking site is higher.

Pretest

We conducted a pretest (N = 17, M_{age} = 23, SD_{age} = 7.951, 76.5% female) to select the personalization elements for Study 2. To achieve substantial variance in perceived personalization, we sought to combine different personalization elements in a single advertisement. Each respondent rated fifteen potential advertisements for a watch that used different personalization elements (life events, gender, age, interests, and friends' referrals) in different combinations, including one non-personalized condition (see Table 3 and Table 4).

------------Insert Table 3 about here------------

Respondents were recruited via Facebook. They were instructed to attentively look at the advertisements and rate the perceived personalization (Kalyanaraman and Sundar, 2006, Srinivasan, Anderson and Ponnavolu, 2002) for each ad on a 7 point scale (1 = totally disagree, 7 = totally agree). We selected the non-personalized advertisement as the baseline (condition 1). We then sought to gradually increase the perceived personalization by successively adding personalization elements. We started by personalizing the ad based on gender and age (condition 2), as this significantly increased the perceived personalization over the control condition (t(16)= 2.963), p= .009). Subsequently, the addition of interests (condition 3) further increased the perceived personalization significantly (t(16)=2.934), p= .029). In the next steps, we consecutively added life events (condition 4) and friend referrals (condition 5). While adding life events and friend referrals did not increase (p=.077) perceived personalization over condition 3 in the pretest, it did increase perceived personalization over the non-personalized condition (condition 4: t(16)=-7.314, p <.001; condition 5: t(16)=-7.878, p<.001). Therefore,

life events and friend referrals were also included in the study, as they did positively contribute to perceived personalization and could increase the variance in perceived personalization.

------------Insert Table 4 about here------------

Main Study

Design and Stimuli

We set up a five-level between-subjects design. Table 5 provides an overview of the manipulations per condition. The advertisement was for a unisex watch from a fictitious brand (Radar). As in Study 1, we aimed to create variance in the perceived personalization measure of the personalized conditions by using different personalization elements in the stimuli. The overall mean was 3.043 and, more importantly, the overall standard deviation was 1.600.

------------Insert Table 5 about here------------

In the non-personalized advertisement, the tagline (above the picture) read "What time is it? Time to discover why everyone is a fan of the top watches from Radar.". In the other conditions, we inserted respondents' gender and age (and interests, depending on the condition) into the tagline. In those conditions that also included life events and/or friend referrals, that information was inserted just above the advertisement, like in a real Facebook ad (see Appendix B for an example). The advertisements were embedded in a fictitious Facebook news feed, similar to the one used in Study 1, which contained one filler item (a profile picture update).

Procedure

Participants (N = 264, M_{age} = 28.011, SD_{age} = 4.094, 53% male) were recruited using the crowdsourcing website Prolific. Based on a pre-screening, only panel members that used Facebook at least once a month were selected. Next, socio-demographic information was collected (gender, birth-year, degree). Then, respondents were asked to indicate the topics they

were most interested in out of a list of 14 possibilities (see Table 6 for the complete list). On the next page, we asked them about their Facebook use (amount of days and minutes per day) and attitude toward Facebook. Subsequently, respondents were randomly allocated to one of the five conditions. We asked them to imagine that the Facebook news feed they were about to see was their own and to look at the page attentively. After completing brand attitude, positive word-of-mouth intention, click intention, self-brand connection, perceived personal relevance, perceived intrusiveness, reactance to the advertisement, perceived personalization, and perceived privacy protection by the social networking site measures, respondents were thanked for their participation. All items were measured using seven-point Likert scales or bipolar semantic differentials (see Table 6).

------------Insert Table 6 about here------------

Results

We used Hayes' (2018) PROCESS macro (custom model) with 5,000 bootstrap samples to test our hypotheses. Perceived personalization served as the independent variable. Perceived personal relevance and perceived intrusiveness were the first-order mediating variables and self-brand connection and reactance towards the advertisement were the second-order mediating variables. The perceived privacy protection by the social networking site was used as the moderator. The dependent variables were brand attitude, positive word-of-mouth intention, and click intention (in separate analyses; see Table 7). All variables were mean-centered for the calculation of the interaction effects.

------------Insert Table 7 about here------------

We find a significant, positive effect of perceived personalization on personal relevance (b = .400, p < .001). Next, we find a significant, positive effect of personal relevance on self-brand connection (b = .339, p < .001), which confirms H4. We also hypothesized an indirect effect

of perceived personalization on self-brand connection via perceived intrusiveness. However, our findings do not confirm H5: perceived personalization does not significantly affect perceived intrusiveness ($b = -.063$, $p = .406$) and perceived intrusiveness, in turn, decreases self-brand connection ($b = -.109$, $p = .013$). This indicates that there is no indirect effect of perceived personalization on self-brand connection via perceived intrusiveness. Self-brand connection was found to positively impact brand attitude ($b = .403$, $p < .001$), WOM ($b = .323$, $p < .001$), and click intention ($b = .281$, $p = .013$). H6 is confirmed.

We also find a significant, negative indirect effect of perceived personal relevance on reactance ($b = -.226$, $p < .001$). Together with the abovementioned finding that perceived personalization has a significant, positive effect on personal relevance ($b = .400$, $p < .001$), this indicates that there is an indirect effect of perceived personalization on reactance towards the advertisement, via perceived personal relevance, confirming H7. Perceived intrusiveness does not act as a mediating variable between the relationship of perceived personalization and reactance to the advertisement since perceived personalization does not significantly affect perceived intrusiveness ($b = -.063$, $p = .406$). Perceived intrusiveness does significantly increase reactance towards the advertisement ($b = .415$, $p < .001$). H8 is not supported. Finally, we hypothesized that reactance to the advertisement would negatively affect consumer responses. However, the effects on Ab ($b = -.122$, $p = .110$), WOM ($b = -.093$, $p = .448$), and click intention ($b = -.061$, $p = .479$) are not significant. H9 is not confirmed.

H10 hypothesized that the negative effect of perceived personalization via personal relevance on reactance toward the advertisement would be stronger when users' perceived privacy protection by the social networking site is higher. First, the effect of perceived personalization on perceived relevance is not moderated by perceived privacy protection ($b = .061$, $p = .086$). The effect of perceived relevance on reactance toward the advertisement is also not moderated by perceived privacy protection ($b = -.037$, $p = 290$). Therefore, H10 is not confirmed.

H11 hypothesized that the positive effect of perceived personalization via perceived intrusiveness on reactance toward the advertisement would be stronger when users' perceived privacy protection by the social networking site is higher. First, the effect of perceived personalization on perceived intrusiveness is not moderated by perceived privacy protection (b = .036, p = .547). The effect of perceived intrusiveness is also not moderated by perceived privacy protection (b = -.026, p = 489). Therefore, H11 is not confirmed.

Finally, the results show that perceived privacy protection does not moderate the effect of reactance toward the advertisement on AB (b = .045, p = 192), WOM (b = .029, p = .507) or on CI (b = -.038, p = .257). Therefore, H12 is not confirmed.

GENERAL DISCUSSION AND CONCLUSION

Table 8 provides an overview of the hypotheses and their conclusions. Our findings confirm previous research on the positive explanatory mechanism of perceived personal relevance (De Keyzer, Dens and De Pelsmacker, 2015, Kim and Huh, 2017). However, contrary to our expectations, in Study 1 we found that perceived personalization decreases perceived intrusiveness, which results in a more positive brand attitude, and click intention. Based on White et al. (2008) and Youn and Kim (2019) we initially expected a negative indirect effect. On the other hand, Kim and Han (2014) also reported this positive effect. They argue that personalized advertisements entail a greater value for consumers and, as such, are less likely to be perceived as unwanted. Schema congruity theory (Meyers-Levy and Tybout, 1989) suggests that schema-congruent stimuli are predictable and more easily processed. Therefore, our findings could be explained via congruity theory: a personalized advertisement (that is congruent with a social network site users' profile and expectations) might not increase intrusiveness. Moreover, the Persuasion Knowledge Model (PKM) (Friestad and Wright, 1994) posits that people learn to recognize and understand persuasive attempts. As such, social networking site users might have learned that there are advertisements in their social

networking sites and how to recognize them. Therefore, they might not feel as intruded when they come across an advertisement as users would have when social networking sites were less familiar. In sum, we contribute to the literature on privacy calculus theory: our findings indicate that the indirect effect on brand outcomes through perceived personal relevance is stronger than the indirect effect through perceived intrusiveness. Therefore, we conclude that the potential benefits of a personalized advertisement (i.e., personal relevance) outweigh the potential costs of a personalized advertisement (i.e., perceived intrusiveness).

------------Insert Table 8 about here------------

The second contribution of the current study lies in the extension of the processing mechanism of personalized advertising. Our findings suggest that perceived personalization has a positive effect on self-brand connection via perceived personal relevance, but not via perceived intrusiveness. Congruity theory suggests that ads self-congruent increase perceived relevance of the ads (Heckler and Childers, 1992). This might also be transferred to the brand in the advertisement, which is related to the self-referencing process triggered by perceived personalization. Via personal relevance, it is clear that consumers' psychological needs are addressed. However, perceived intrusiveness does not seem to hinder the self-referencing process. Our findings also indicate that perceived personalization can decrease reactance to the advertisement via perceived relevance. This is in line with White et al. (2008) who found that a personalized advertisement is appreciated by consumers when it is perceived as useful and, as such, their advertisement avoidance decreases. Contrary to our expectations reactance to the advertisement did not significantly affect brand responses. This might be explained by the findings of Marotta, Zhang and Acquisti (2015), who noted that while consumers do not like being tracked online, they often appreciate the benefits of online targeted advertising. As a result, they will not be inclined to try to react negatively to the advertisement.

We also set out to examine the processing mechanism by exploring its boundary conditions. Based on the commitment-trust theory, perceived privacy protection by the social networking site was examined as a potential moderator. Previous research has indicated that, by creating trust, which can be done by being clear about privacy protection measures or providing user control, a spillover-effect from the website to the embedded, personalized, advertisements can take place (Aguirre et al., 2015). According to the protection-motivation theory (Rogers, 1983), we expected that privacy controls would reduce consumer reactance. For example, Mpinganjira and Maduku (2019) show that perceived privacy control has a negative influence on privacy concerns and, indirectly, on ad avoidance. When users are confident their privacy is protected, they may appreciate personalized advertising more. As a result, they might value the personal relevance of the personalized advertisement more highly which results in lower reactance towards the advertisement. Our findings indicate that this is not the case. The future research section contains suggestions on how to explore this finding in future research.

Managerial implications

Our findings also have implications for advertisers. The first important general conclusion of our study is that a higher degree of perceived personalization leads to more perceived relevance, a well-documented effect, also in previous studies. Surprisingly, both our studies show that perceived personalization also leads to less perceived intrusiveness. Although other scholars have also found this effect, it goes against the commonly held conviction that personalized advertising interrupts the experience of people on social network sites, and therefore has a negative effect on intrusivenesss. An explanation for this effect might be that personalized advertisements entail a greater value for consumers and, as such, are less likely to be perceived as unwanted. Additionally, social networking site users might have learned that there are advertisements in their social networking sites and how to recognize them. Therefore, they

might not feel as intruded upon when they come across an advertisement as users would have when social networking sites were less familiar.

The root cause of these positive effects is perceived personalization. In our study, we did not test the antecedents of perceived personalization. For advertising practitioners, it is important to develop insights into which actual personalization cues increase perceived personalization, and the conditions under which perceived personalization might still have negative effects. For instance, ongoing research of our team found that personalization based on people's interest, location and age are the main drivers of perceived personalization. However, location-based personalization could also lead to negative reactions because it is also perceived as annoying, and might thus have a negative downstream effects. Advertisers are thus advised to personalize their messages based on cues such as interests, age and gender that increase personalization without eliciting negative responses.

Another important finding is that perceived personalization increases self-brand connection and decreases reactance, via perceived personal relevance. However, perceived intrusiveness does not seem to play a role in this mechanism, and furthermore, increased reactance to personalized ads does not seem to have negative effects on outcomes such as the attitude towards the brand, WOM intention, and click intention. These findings have important implications for advertising practitioners. First of all, perceived personal relevance is key to obtaining positive outcomes of personalized advertising, mainly because it leads to higher self-brand connection: it becomes easier for a consumer to connect the brand to their own self-image, which results in a more positive brand attitude, word-of-mouth intention, and a higher click intention. Moreover, the increase in self-brand connection might also foster more long-term effects: a greater self-brand connection results in stronger and more favorable brand associations in the consumers' memory. Practitioners should thus develop personalized messages that are not only personally relevant, but at the same time communicate this relevance in such a way that strong links

between the self-image and the brand are developed. Equally important is that perceived intrusiveness and reactance do not seem to play a role in the effect of personalized advertising on outcomes. Via personal relevance, it is clear that, by means of self-referencing, consumers' psychological needs are addressed. However, perceived intrusiveness does not seem to hinder the self-referencing process. Additionally, reactance to the advertisement did not significantly affect brand responses. While consumers may not like being tracked online, they often appreciate the benefits of online targeted advertising. As a result, they will not be inclined to react negatively to the brand. The important implication is that advertisers should not worry too much about the intrusiveness of their personalized advertising and the reactance that these advertisements might elicit.

Our findings also provide indications that brand managers and social network site owners should be aware of the effects of the social networking site in which they place their personalized advertisements. Our findings indicate that presenting a personalized advertisement on a social networking site that is perceived by the consumer as protecting their privacy might reinforce the effect of perceived personalization on personal relevance, and thus impact one of the most important effects in the mechanism that relates personal advertising to brand outcomes. It seems good practice for social network sites to clearly communicate about privacy protection practices because it might the effect of perceived personalization on perceived relevance. Social networking site owners could provide advertisers with guidelines to point consumers to privacy protection measures. Additionally, advertisers could urge social network sites to implement more privacy protection measures, and to communicate them clearly to theire users.

LIMITATIONS AND FUTURE RESEARCH

The current study has examined the processing of perceived personalization regardless of the type of personalization that was used. Previous research has indicated which personalization elements contribute to the perceptions of personalization (e.g., De Keyzer, Dens and De Pelsmacker, 2019). Maslowska, Smit and van den Putte (2016) also showed that different personalization strategies could lead to different perceptions of personalization and could ultimately lead to further persuasion effects (e.g., increased attention, attitudes, and behavioral intentions). Nevertheless, we believe that the persuasion effects of different types of personalization elements and strategies remain an interesting avenue for future research.

Both studies presented here investigate personalized advertising for relatively hedonic products (travel and a watch). Hedonic products are used because of their aesthetic or sensory experience, and for amusement, fantasy, or fun (Hirschman and Holbrook, 1982). They are typically evaluated on subjective characteristics (shape, taste, look) (Dhar and Wertenbroch, 2000). Future research should also examine utilitarian products (e.g., insurance) to test whether our findings generalize to more types of products. As utilitarian products are usually more cognitively evaluated (Dhar and Wertenbroch, 2000), the more evaluative mediators (relevance and intrusiveness) might gain more importance. Moreover, De Keyzer, Dens and De Pelsmacker (2015) already indicated that personalized advertisements for hedonic products might be more congruent with consumers' motives for using SNSs than advertisements for utilitarian products. As a result, they might be more readily perceived as relevant.

Second, we used Facebook as a context. However, Voorveld (2019) argues that consumer responses to brand communication in various types of social media platforms differ. In line with the context appreciation theory (e.g., De Pelsmacker, Geuens and Anckaert, 2002), the platform in which the personalized advertisement is embedded can also be used as a source of information in the processing mechanism of personalized advertising. Future research is

encouraged to test the current model in different social media platforms and to provide for an explicit comparison between platforms.

The studies have been conducted in a context that may affect the ecological validity of the results. We have tried to make the stimulus material realistic and have asked respondents to imagine this was their personal Facebook page. To ensure internal validity of the study we only used two posts: a mock profile picture update and the actual advertisement. However, the personalization was very overt (by using answers to initial questions in the stimulus material). Even though this not uncommon, personalization techniques are often more covert (and personal information is not always provided by the user but scraped or tracked on the internet). There are some mixed findings on the effect of differences between overt and covert personalization. Sundar and Marathe (2010) suggest that covert personalization would increase privacy concerns, whereas Chen and Sundar (2018) do not find differences between covert and overt personalization in mobile apps. Therefore, we suggest future research to examine the difference between covert and overt personalization further.

Next, perceived privacy protection by the social networking site might be a particularly important moderator for consumers with a high, pre-existing, privacy concern. The effect of perceived personalization on perceived relevance is significantly moderated by perceived privacy protection at a 90% confidence level, but not at a 95% confidence level (which was used in the current study). This gives an indication that perceived privacy protection might an interesting venue to examine in future research. Moreover, in our sample the average self-reported privacy concern was rather high (M = 5.80, SD = 1.01). Therefore, we suggest future research to test the interaction between privacy concern and perceived privacy protection by the social networking site to gain further insights into the boundary conditions of perceived personalization.

Both perceived relevance and perceived intrusiveness do not only have to do with the message being personalized based on personal characteristics. Other factors that might affect perceived relevance and intrusiveness could be the timing with which the message is delivered, the frequency, and the channels used are also meaningful to consumers (McMurtry, 2017). Future research could further investigate the other characteristics of advertising on social networking sites than its personalization that could influence both perceived relevance and perceived intrusiveness.

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