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Effects of online behaviorally targeted native advertising on persuasion: A test of two competing mechanisms

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ABSTRACT

Online native advertising is increasingly targeted based on people's online behavior. This study examines the effects of online behaviorally targeted native advertising on ad and brand responses. In addition, it tests two competing explanatory mechanisms that are suggested in the literature on online behavioral advertising that may result in opposing persuasion outcomes: perceived personal relevance of the advertisement and understanding of online behavioral advertising as a persuasive tactic. An experiment showed that behaviorally targeted native advertising resulted in higher perceived personal relevance than native advertising, which consequently had a positive effect on persuasion (i.e., ad and brand responses). Although behaviorally targeted native advertising (versus native advertising) induced persuasion knowledge of online behavioral advertising as a persuasion tactic, this did not negatively affect persuasion. This study provides new insights into the theoretical mechanisms that explain behaviorally targeted native advertising effects and has implications for the advertising practice.

Native advertising is increasingly targeted toward consumers based on people's browsing history or other online behavioral activities (e.g., Kumar & Gupta, 2016; Singer, 2018). This development combines two advertising tactics: *native advertising*, which is paid advertising that is embedded in entertaining content, such as a news article or video (Wojdowski & Evans, 2016; Lalla & Kumar, 2016; Lin & Kim, 2016) and *online personalized advertising* which involves all online ads that use personal information to target specific individuals by adapting the message (content personalization) or by exposing only specific people to the message (targeting individuals; Boerman et al., 2021). When ads are personalized based upon online behavior (e.g., searches, purchases, media usage), this is often referred to as online behavioral advertising (OBA; Aiolfi et al., 2021; Boerman et al., 2017). For marketers, personalized advertising, such as OBA, offers the opportunity to reach specific target groups that are potentially interested in the message (Boerman et al., 2017; De Keyser et al., 2022; Teeny et al., 2021).

To illustrate the advertising under investigation: A YouTube video showing a chef cooking a meal with branded products, is online native advertising. When this video is specifically shown to people based on their online behavior, such as searching online for recipes or watching online videos about cooking, it is *behaviorally targeted native advertising*. This phenomenon is an interesting venue for research as it might bring new challenges for consumers and it is unclear how this translates into

persuasive outcomes.

More specifically, behaviorally targeted native advertising is an important area of research because it combines two persuasive strategies that may be difficult for consumers to recognize and to cope with. For native advertising it is argued and demonstrated that people have difficulties in distinguishing native advertising from editorial content as native advertising hides its commercial nature by embedding the persuasive message into seemingly non-commercial and entertaining content (Marchand et al., 2015; Nebenzahl & Jaffe, 1998; Wojdowski & Evans, 2016). Furthermore, research has shown that consumers may be aware that online ads are personalized based upon their data, however, they do not fully understand the sophisticated data collection and processing techniques used to personalize advertisements (Boerman et al., 2017; Segijn & Van Ooijen, 2022). Therefore, we believe it is crucial to gain insights into the psychological mechanisms that could explain how consumers are influenced by this type of advertising.

Interestingly, the combination of native advertising and OBA provides the opportunity to examine two opposing mechanisms. Previous research into the effects of personalized advertising reported mixed results, showing both positive and negative persuasive effects (Aiolfi et al., 2021; for a literature review, see Boerman et al., 2017), also referred to as the 'personalization paradox' (Aguirre et al., 2015). Personalized advertising seems to activate two opposing mechanisms that correspond

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to its costs and benefits (Aiolfi et al., 2021; Ham, 2017; Hayes et al., 2021; Segijn & Van Ooijen, 2022), that are also likely to occur in the context of personalized native advertising. On the one hand, applying online behavioral targeting to native advertising increases the personal relevance of the ad, because it is related to one's own interests and behaviors. This can lead to processing of the ad in relation to the self (self-referencing) which enhances advertising effectiveness (e.g., De Keyzer et al., 2015, 2022). On the other hand, the realization that the native ad is based on their personal online behavior (i.e., understanding of the use of personalization as a tactic) can cause privacy concerns and can make people to feel vulnerable, (which consequently diminishes the advertisement's effectiveness (Aiolfi et al., 2021; Aguirre et al., 2015; Boerman et al., 2021).

In sum, this study argues that there are two competing mechanisms that may explain people's responses to native advertising that is targeted based on online behavior: personal relevance and the understanding of the personalization tactic. Based on self-referencing, it is hypothesized that perceptions of perceived personal relevance increase the persuasive impacts of behaviorally targeted native advertising, translating into positive consumers responses. And, based on persuasion knowledge and reactance theory it is hypothesized that behaviorally targeted native advertising, as compared to online native advertising that is not targeted, activates people's knowledge of OBA as a persuasive tactic and subsequently decreases its persuasive impact. Thus, the current study a) examines the effects of targeting of native advertising based on online behavioral data, on ad and brand responses; and b) tests whether these effects can be explained by two underlying theoretical mechanisms that might play opposing roles in responses to the advertising and the advertised brand (people's perceived personal relevance and activation of their persuasion knowledge of OBA as a persuasive tactic).

This study offers an important theoretical contribution to the literature by providing insights into the mechanisms (i.e., perceived personal relevance and understanding of OBA as a persuasive tactic) that might explain contradicting effects of behaviorally targeted native advertising. Furthermore, the outcomes of this study are relevant for practitioners and policymakers as they indicate whether and why targeting of native advertising based on online behavior is an effective persuasion strategy.

Theoretical framework and research hypotheses

The role of perceived personal relevance

The practice of personalizing online advertising based on personal online information has become common practice and is believed to be part of the future of advertising (Kumar & Gupta, 2016; Strycharz et al., 2019). Traditional online advertising is often avoided (Resnick & Albert, 2014) because of a lack of perceived personal relevance and perceived intrusiveness of online advertisements (McCoy et al., 2008). A message has high perceived personal relevance when it corresponds with an individual's circumstances, interests, or preferences (Kreuter & Wray, 2003). With placing ads in contexts that are relevant or that provide a fit, advertisers have sought to create relevance for a long time already (for an overview see Stipp, 2018). More recently, advertisers try to increase the personal relevance of their ads by personalizing ads based on data about one's online behavior (e.g., Puzakova et al., 2013; Stewart & Pavlou, 2002), personality traits (e.g., Matz et al. 2017; Winter et al., 2021), personal preferences and information such as name and gender (e.g., Bang and Wojdyski, 2016; Matz et al. 2017; DeKeyzer et al., 2022). Although some studies showed that personalization might be ineffective (see Teeny et al., 2021 for a review), several studies have shown that personalized advertising creates a link between the ad and the person's interests, which makes it more personally relevant (e.g., DeKeyzer et al., 2022; Smit et al., 2014; Ur et al., 2012; Walrave et al., 2018). In a similar vein, native advertising that is targeted based on online behavior is expected to be perceived as more personally relevant than native advertising that is not related to people's searches or

interest.

Several theoretical notions justify the effects of relevant ads. Perceived personal relevance influences processing of the message and thereby has consequences for persuasion outcomes for three reasons. First, people are cognitively sensitive to information that is related to themselves, and therefore, personalized ads lead to self-referencing (Dijkstra, 2008; Jung, 2017; Maslowska et al., 2011). Self-referencing means that the message is processed in the context of the self and thus is related to information about one's self (Tam & Ho, 2006). Research has shown that self-referencing results in a greater appreciation of the message (Maslowska et al., 2016).

Second, message relevance increases the motivation to process the ad. The Elaboration Likelihood Model explains that increased motivation to process content results in more elaborate message processing and stronger persuasive outcomes if the message has strong arguments (Dijkstra, 2008; Petty et al., 2009; Petty & Cacioppo, 1986). Similarly, limited capacity models of information processing, including the LC4MP (Lang, 2000; Lang et al., 2006), predict that relevance increases message elaboration. People have a limited amount of cognitive resources available to process advertising. The amount of resources that is allocated to process the ad largely depends on message characteristics, such as relevance (Buijzen et al., 2010). If an advertisement is perceived as more relevant, more cognitive resources are allocated to processing the message, which is expected to lead to more persuasion (Buijzen et al., 2010).

Third, based on information processing theory, perceived personal relevance might also be used as a cue to decide how to evaluate the ad and the brand on a more heuristic, less elaborate level. In that case, the relevance of the message to the self functions as a heuristic or decisional cue to easily judge the message and the brand (Priester & Petty, 1996). In short, people may think, 'this message is relevant to me, so it must be good for me', which is likely to lead to positive responses to the ad (i.e., ad attitude) and the brand (i.e., brand attitude and purchase intentions).

Thus, self-referencing, increased processing motivation, and the use of relevance as a decisional cue, provide justifications for the persuasive effects of perceived relevance of a personalized ad on both ad and brand responses, which have been identified in previous studies: online personalized ads have been shown to positively influence the attention to the ad (Bang and Wojdyski, 2016; Jung, 2017), brand recall (Tam & Ho, 2006), attitudes toward the advertised brand (De Keyzer et al., 2015, 2022; Maslowska et al., 2013), intentions to click on the ad (De Keyzer et al., 2015, 2022), and actual click through behavior (Tucker, 2014).

In a similar vein, it is expected that native advertising that is targeted based on a person's online behavior (relative to native advertising that is not based on their online behavior) increases the perceived personal relevance of the ad. If the content of the native advertisement fits one's interest (i.e., is based on previous behavior), the native ad is expected to be perceived as more relevant. The enhanced personal relevance of targeted native advertising is assumed to consequently induce positive affective and behavioral responses to the ad and the advertising brand. Therefore, the following hypotheses are formulated:

H1. Native advertising that is targeted based on online behavior (vs. non-targeted native advertising) leads to higher perceived relevance of the ad.

H2. Higher perceived relevance of the ad positively affects a) attitude toward the advertising video, b) brand attitude, and c) purchase intent.

Combining H1 and H2 leads to the following mediation hypothesis:

H3. The effect of online behavioral targeting of native advertising on a) attitude toward the advertising video, b) brand attitude, and c) purchase intent is mediated by the perceived relevance of the ad.

The role of persuasion knowledge

Behaviorally targeted native advertising can also negatively affect people's responses to the ad. Research has shown that personalized advertising can be seen as an invasion of privacy and can increase feelings of vulnerability and intrusiveness (see e.g., Aguirre et al., 2015; Boerman et al., 2017; Teeny et al., 2021). Personalized messages can also generate a negative meaning if they are interpreted as an attempt at manipulation (Teeny et al., 2021). Thus, although people might perceive targeted native advertising as more personally relevant, behaviorally targeted native advertising - as opposed to non-targeted - native advertising may activate persuasion knowledge (i.e., understanding that personal data are used to target the ad). The persuasion knowledge model proposes that three types of knowledge may be activated when confronted with a persuasive attempt: topic, agent, and persuasion knowledge (Friestad & Wright, 1994): Topic knowledge concerns people's knowledge about the topic of the persuasive attempt, for example, their knowledge and expertise about cooking. Agent knowledge encompasses people's knowledge about the intentions of the agent of the persuasive intent, for example, their realization that an advertisement is created by an advertiser to persuade. Persuasion knowledge refers to people's knowledge about the persuasion tactics that are employed, for example, people's realization that targeting is used. The knowledge type that is developed best will determine whether people will be persuaded or whether they will resist persuasion (Friestad & Wright, 1994). In the present study, agent and topic knowledge are not expected to vary between the native and behaviorally targeted native ad, because the same advertisement is used. However, understanding of OBA use as a persuasive tactic is expected to vary; in one condition the tactic of OBA is used, whereas in the other OBA is not used.

It is hypothesized that when people recognize OBA and thus realize that the ad is based on their personal information, their knowledge of OBA as a persuasive tactic and beliefs about the OBA technique are activated (Friestad & Wright, 1994; Ham & Nelson, 2016). Because people appear to have quite critical attitudes toward the tactic of using personal information to target advertising (Boerman et al., 2021; Smit et al., 2014; Ur et al., 2012), the understanding that an ad is OBA might translate into negative opinions with regard to the brand and the product (e.g., Ham, 2017; Goldfarb & Tucker, 2011; Lin & Kim, 2016; McDonald & Cranor, 2010; Moore et al., 2015; Smit et al., 2014; Turow et al., 2012). Based on previous studies on OBA that have found that people are critical toward the technique (Boerman et al., 2021; Lin & Kim, 2016; Moore et al., 2015), as well as on the persuasion knowledge model, behaviorally targeted native advertising (versus native advertising that is not targeted) is expected to have a negative impact on persuasion outcomes through the activation of people's understanding that OBA is used as a tactic.

However, in the context of targeted native advertising, it might be difficult for people to activate their persuasion knowledge for two reasons (Wojdowski & Evans, 2016). First, native advertising, whether related to previous online behavior or not, is harder to recognize as advertising, because it is presented as editorial content (Nebenzahl & Jaffe, 1998; Wojdowski & Evans, 2016). Both the commercial source and the persuasive intent are masked by a seemingly non-commercial appearance of the advertising message (Nebenzahl & Jaffe, 1998). If people do not recognize native advertising as advertising, it is unlikely that they will activate the knowledge they have about OBA. Second, the combination of native advertising and OBA techniques is relatively new. Therefore, seeing native advertising is less likely to activate people's knowledge of OBA. Nevertheless, compared to native advertising that is not targeted, the chances that native advertising that is targeted based on people's online behavior activates knowledge of the targeting mechanisms used in OBA are expected to be higher. Therefore, we argue that native advertising that is targeted based on online behavior, as compared to native advertising that is not targeted, induces people's understanding of OBA as a persuasive tactic and consequently reduces

persuasion outcomes. We hypothesize:

H4. Native advertising that is targeted based on online behavior (vs. non-targeted native advertising) leads to a better understanding of OBA as a persuasive tactic).

H5. The understanding of OBA as a persuasive tactic negatively affects a) attitude toward the advertising video, b) brand attitude, and c) purchase intent.

H6. The effect of behaviorally targeted native advertising on a) attitude toward the native advertising video, b) brand attitude, and c) purchase intent is mediated by the understanding of OBA as a persuasive tactic.

Method

Design and sample

To test the hypotheses, an online experiment with a single-factor (behaviorally targeted native advertising, versus non-targeted native advertising), between-subjects design was conducted. Participants were randomly assigned to one of the two conditions. People between 18- and 35-years-old were included, as YouTube is most popular among this age group (Global Media Insight, 2021). A convenience sample of 77 mainly Dutch participants between 19- and 35-years-old ($M_{age} = 25.68$, $SD = 3.44$; 64.91% male; 50% had a university degree) was recruited. A student assistant posted messages on his Facebook to recruit the participants.

Procedure

A scenario-based experiment was conducted to create one condition for native advertising targeted based on online behavior and a condition for native advertising that is not targeted. Scenarios have successfully been used to study online behavior (e.g., Van Noort et al., 2007). All participants were exposed to the same native advertising video on preparing steak for dinner. An existing video was used, which was not manipulated or edited for this study. However, this video was behaviorally targeted (or not targeted) based on the online search behavior in the scenario. Respondents were asked to imagine searching for the current weather conditions (non-targeted native advertising condition) or to search for instructions on how to prepare a perfect steak (native advertising targeted based on online behavior), before going to [YouTube.com](https://www.youtube.com) to listen to some music. In the targeted native advertising condition, the search (prepare a steak) matched the content of the video (prepare a steak), whereas in the native advertising condition the search (weather conditions) did not match the content of the video (prepare a steak). The choices for cooking and steak were based on the popularity of these topics on YouTube and Google (Burgess & Green, 2013).

After reading this scenario, the respondents were presented with a screenshot of the YouTube channel asking them to imagine that they would encounter this page when searching for music on YouTube. In the screenshot, the native online ad was part of the recommended videos section, which was shown at the top of the page. Then respondents were shown a screenshot on which this native advertising video was highlighted and was clickable. Then all respondents watched the native advertising video. To summarize, in the native advertising condition, the participants read the scenario about searching for weather information and then watched the native advertising video about the steak, which was thus not related to their previous fictitious online search behavior. In the targeted native advertising condition, the participants read the scenario about searching for preparing the steak and then watched the native advertising video about the steak, which was thus related to their previous fictitious online search behavior.

After watching the video, respondents completed a questionnaire that measured the brand responses, video responses, and mediating and

control variables. Finally, respondents were thanked for their participation.

Stimulus material

The video “The steak challenge, by Marco Pierre White”, starred the famous chef Marco Pierre White preparing steaks on the branded [youtube.com](https://www.youtube.com) video channel of the brand Knorr. The thumbnail of the video contained the Knorr logo. This video is an excellent example of native advertising because the brand played an important role in the video, yet was not too obviously visible throughout the video. The video lasted 1 min and 54 s. One steak was prepared with salt and pepper, the other with a Knorr stock cube. The chef showed the package of the stock cube and mentioned the brand while preparing the steak. The final result was that the chef preferred the steak with the Knorr stock cube over the one prepared with only salt and pepper.

Measures

Attitude toward the native advertising video was measured with a three-item seven-point semantic differential scale: ‘bad/good,’ ‘unpleasant/pleasant,’ and ‘unfavorable/favourable’ (MacKenzie et al., 1986). Scores were averaged to create a single measure of video attitude (Cronbach’s alpha = .88, $M = 3.85$, $SD = 1.24$). *Brand attitude* was measured with the same scales as video attitude and again the scores were averaged (Cronbach’s alpha = .94, $M = 4.25$, $SD = 1.32$). As a behavioral response, *intention to purchase* the brand was measured with four questions on a seven-point Likert scale ranging from never to definitely. These questions referred to the specific product that was featured in the video: ‘Would you buy Knorr beef stock?’ ‘Do you intend to buy Knorr beef stock,’ ‘Are you interested in purchasing Knorr beef stock,’ and ‘How probable is it that you would buy Knorr beef stock’ (Spears & Singh, 2004). Scores were averaged to create a single measure of purchase intention (Cronbach’s alpha = .96, $M = 3.10$, $SD = 1.55$).

Perceived relevance was measured with four items (Ham & Nelson, 2016; Laczniaik & Muehling, 1993) on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) with the statements: In this scenario ... ‘the online video content was relevant to me,’ ‘I received valuable information through this video,’ ‘The video was interesting to me,’ and ‘This online video was worth paying attention to.’ Scores were averaged to create one measure of perceived relevance (Cronbach’s alpha = .91, $M = 3.25$, $SD = 1.57$).

Understanding OBA as a persuasive tactic (based on, Bearden et al., 2001; Ham & Nelson, 2016; Van Reijmersdal et al., 2017) was measured with three-items on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*): ‘This video was adjusted to my preferences’, ‘This video was selected for me specifically’, and ‘This video was presented to me because I had searched for recipe’s earlier’. Scores were averaged to create one measure for understanding of OBA as a persuasive tactic (Cronbach’s alpha = .75, $M = 3.87$, $SD = 1.48$).

Several *control variables* were assessed such as age, gender, level of education, prior use of any Knorr products (85.7% yes), and the frequency of watching YouTube videos, ($M = 5.44$, $SD = 0.97$), frequency of searching for online recipes ($M = 3.77$, $SD = 1.23$) and frequency of watching cooking videos ($M = 2.70$, $SD = 1.15$) all measured on a scale ranging from 1 (*never*) to 7 (*every day*; $M = 5.44$, $SD = 0.97$).

Results

Randomization

To verify whether participants in the experimental groups were similar with respect to the control variables, a test of equivalence was conducted. The participants in the targeted native advertising and the non-targeted native advertising groups did not differ with respect to gender, $\chi^2(1) = 0.09$, $p = 0.77$, prior brand use, $\chi^2(1) = 1.47$, $p = 0.23$,

age, $F(1, 75) = 0.71$, $p = 0.40$, level of education, $F(1, 75) = 0.75$, $p = 0.40$, frequency of watching YouTube videos, $F(1, 75) = 0.54$, $p = 0.47$, frequency of searching for online recipes, $F(1, 75) = 0.40$, $p = 0.53$ or frequency of watching cooking videos $F(1, 75) = 0.89$, $p = 0.35$. Therefore, no covariates were included in the analyses.

Hypothesis testing

Table 1 provides an overview of the mean scores for the mediators and dependent variables for each condition. To test the hypotheses, PROCESS (Model 4; Hayes, 2013) was used with perceived relevance and understanding of OBA as a persuasive tactic as the mediators in parallel, behaviorally targeted native advertising versus non-targeted native advertising as the independent variable, and either video attitude, brand attitude or purchase intent as the dependent variable. Because we tested hypotheses with a specific direction, we used one-tailed tests (90% confidence). PROCESS uses a regression-based approach with bootstrapping. This method respects the non-normality of the sampling distribution of the indirect effect and offers the possibility to test two mediators in parallel (Hayes, 2013).

As predicted in H1 and H2, compared to non-targeted native advertising, the behaviorally targeted native advertising led to increased perceptions of relevance of the native advertising clip ($b = 0.69$, $SE = 0.35$, $t = 1.99$, $p = 0.05$), which consequently led to a more positive attitude toward the native advertising video ($b = 0.42$, $SE = 0.08$, $t = 4.89$, $p < 0.001$), more positive brand attitudes ($b = 0.37$, $SE = 0.09$, $t = 3.97$, $p < 0.001$), and higher levels of purchase intent ($b = 0.34$, $SE = 0.12$, $t = 2.89$, $p = 0.005$). Thus, H1, H2a, H2b, and H2c are confirmed. In addition, the analyses showed significant indirect effects of the targeting native advertising via perceived relevance on attitude toward the native advertising video, brand attitude, and purchase intent (see Table 2 for indirect effects). Thus H3a, H3b, and H3c were also confirmed. Figs. 1–3 provide a visual presentations of the results.

With respect to H4, the analyses showed that when exposed to targeted native advertising, people’s understanding of OBA as a persuasive tactic was higher ($b = 0.98$, $SE = 0.32$, $t = 3.06$, $p = 0.003$) than when they were exposed to native advertising that was not based on previous search behavior. Thus, H4 was confirmed. However, this understanding of the OBA tactic did not result in any effects on attitude toward the native video ($b = 0.02$, $SE = 0.09$, $t = 0.244$, $p = 0.81$), brand attitude ($b = 0.06$, $SE = 0.10$, $t = 0.54$, $p = 0.59$) or purchase intent ($b = 0.07$, $SE = 0.13$, $t = 0.51$, $p = 0.61$). Thus H5a, H5b, and H5c were not confirmed. With respect to H6, the analyses showed no indirect effects of online behavioral targeting of native advertising via understanding of OBA as a persuasive tactic on attitude toward the native advertisement, brand attitude, or purchase intent (Table 1). This means that H6a, H6b, and H6c were not confirmed. Although we did not have any hypotheses about the direct effects of targeting on video and brand evaluations, for reasons of completeness, total and direct effects are reported in Table 3.

Table 1

Means of the mediators and dependent variables for the two conditions.

	Targeted native advertising	Non-targeted native advertising
Relevance	3.63 (1.69) ^a	2.93 (1.39) ^b
Understanding OBA tactic ¹	4.39 (1.54) ^a	3.41 (1.28) ^b
Video attitude	3.62 (1.15) ^a	4.06 (1.29) ^a
Brand attitude	3.91 (1.56) ^a	4.54 (0.99) ^b
Purchase intent	3.02 (1.59) ^a	3.16 (1.53) ^a

Note: means are portrayed with (SD) between parentheses. ^{ab} means in the same row with different superscripts differ significantly from each other at $p < 0.05$.¹ means for understanding OBA tactic differ significantly at $p = 0.051$.

Table 2

Indirect effects of behaviorally targeted native advertising through relevance and understanding of OBA as a persuasive tactic on attitude toward the video, brand attitude, and purchase intention.

Mediator	b ¹	SE ²	BCA90%CI ³
Perceived personal relevance			
Attitude toward the video	0.29	0.17	[.06; .62]
Brand attitude	0.26	0.15	[.05; .54]
Purchase intention	0.24	0.17	[.04; .61]
Understanding OBA tactic			
Attitude toward the video	0.02	0.09	[-.13; .18]
Brand attitude	0.05	0.10	[-.10; .22]
Purchase intention	0.07	0.14	[-.14; .32]

Note: ¹ Unstandardized coefficients of the indirect effect; ² Standard error; ³ Bias corrected accelerated 90% confidence interval with lower and upper limits.

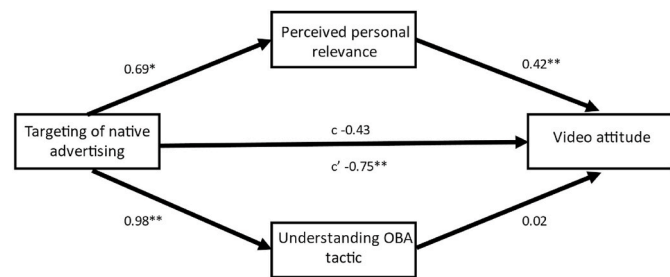


Fig. 1. Mediated and Direct Effects of Targeting on Video Attitude
Note: b coefficients are portrayed. *p < 0.01, **p < 0.05.

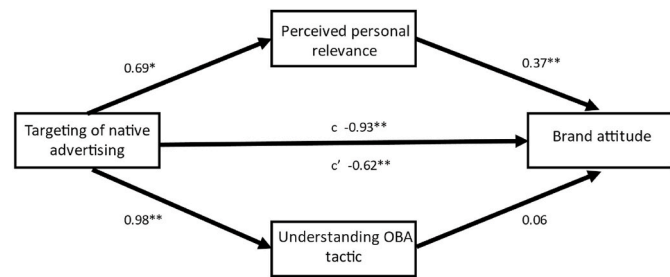


Fig. 2. Mediated and Direct Effects of Behavioral Targeting on Brand Attitude
Note: b coefficients are portrayed. *p < 0.01, **p < 0.05.

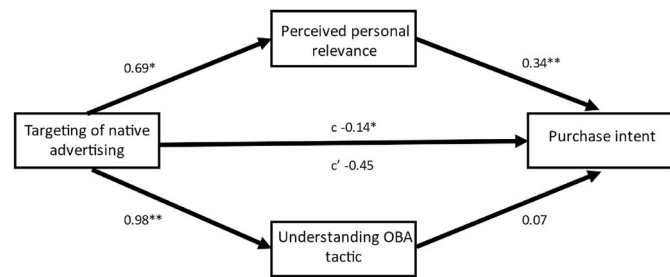


Fig. 3. Mediated and Direct Effects of Behavioral Targeting on Purchase Intent
Note: b coefficients are portrayed. *p < 0.01, **p < 0.05.

Conclusion

This study examined the impact of behaviorally targeted native advertising. More specifically, this study is the first to simultaneously compare and test two underlying processes that theoretically explain the persuasive impact of behaviorally targeted native advertising in opposite directions: perceived personal relevance and activation of people's

Table 3

Total and direct Effects of Behaviorally Targeted Native Advertising on Attitude toward the Video, Brand Attitude, and Purchase Intention.

	Total effect (c)		Direct effect (c')	
	b (SE)	t; p	b (SE)	t; p
Video attitude	- 0.43 (0.28)	-1.56; 0.12 <0.001	- 0.75 (0.26)	-2.91; <0.001
Brand attitude	- 0.93 (0.28)	-3.31; <0.001	- 0.62 (0.29)	-2.11; 0.04
Purchase intention	- 0.14 (0.36)	-0.40; .069	- 0.45 (0.36)	-1.25; 0.22

understanding of behavioral targeting as a persuasive tactic.

The present study leads to two important conclusions. First, the results show that perceived relevance explains the positive impact of behaviorally targeted native advertising: Native advertising that is linked to people's online behavior increases perceived personal relevance, which in turn positively influences affective and behavioral brand and ad responses. This is in accordance with previous studies on targeting of traditional online advertisements, such as display advertising and advertising in social networks (e.g., Aguirre et al., 2015; DeKeyser et al., 2022; Walrave et al., 2018).

Second, this study showed that people's understanding of OBA as a tactic, did not explain the effects of behaviorally targeted native advertising. Although behaviorally targeted native advertising activated knowledge of OBA as a tactic, this did not influence consumer responses to the advertisement. This means that recognizing that a video advertisement was based on previous online search behavior did not lead to more negative or more positive responses to the ad or the brand. According to the persuasion knowledge model, people use their persuasion knowledge to cope with a persuasive attempt (Friestad & Wright, 1994). This means that, based on their knowledge of the tactic, they decide whether they want to be influenced or whether they want to resist the message or whether the message does not affect their responses. This study shows that for behaviorally targeted native advertising, people's understanding of persuasion tactics did not serve as a defense mechanism against persuasion nor did it increase persuasion, rather it left their evaluation of the video and the brand unaffected. It seems that other processes, in this case perceived relevance, provide a better explanation of persuasive effects. Understanding of OBA as a persuasive tactic that is used does not seem to play a role.

Interestingly, people in the sample were able to activate knowledge of OBA as a persuasive tactic when confronted with it in the form of native advertising. Based on previous literature (Nebenzahl & Jaffe, 1998; Wojdyski, 2016), it was uncertain whether the hidden nature of native advertising would offer people the opportunity to activate this knowledge, especially because native advertising was not combined with OBA techniques until recently. This study shows that OBA was recognized as such when used in combination with native advertising, yet this knowledge did not affect persuasion.

Altogether, this study suggests that, in the case of behaviorally targeted native advertising, the benefits of the native ad being more personally relevant seem to outweigh the understanding that this tactic is based on previous search behavior. This means that people seem to respond positively to more relevant native ads, even when they know that their personal information is used to personalize them. This finding is in line with previous research, that also showed that the potential benefits of a personalized advertisement (i.e., personal relevance) outweigh the potential costs of a personalized advertisement (i.e., perceived intrusiveness; DeKeyser et al., 2022).

Limitations and directions for future research

The findings and the limitations of the present study lead to several suggestions for future research. First, this study provides new insights into the mechanisms that explain the effects of behaviorally targeted

native advertising. The combination of OBA with native advertising creates a unique situation in which various mechanisms might be at work. For example, the perceived intrusiveness of the OBA has been associated with negative brand effects, whereas the credibility of native advertising has been associated with positive brand effects. Nevertheless, insights into the interplay of several positive and negative mechanisms are lacking. Therefore, future research should aim to extend the insights offered by the present study by testing more explanatory mechanisms within one conceptual model.

The present study focused on several affective and behavioral brand and ad responses. However, specifically for online advertising, it would be interesting to also include engagement outcomes in future research, such as clicking behavior, forwarding intention, and liking of behaviorally targeted native advertising.

Although scenarios have been successfully used to mimic online situations, a scenario is different than real online behavior. Therefore, future research is needed that replicates our findings in a more naturalistic setting in which people really perform an online search task and are subsequently exposed to targeted or non-targeted native advertising on a real website.

The findings clearly indicate that both personal relevance and understanding of the persuasion technique are induced by native advertising that is targeted based on online behavior. However, only relevance translated into positive persuasion outcomes, while understanding of the persuasion tactic did not translate into negative opinions with regard to the brand and the ad. These findings fit assumptions of the Persuasion Knowledge Model, as this model suggests that knowledge of persuasion techniques helps people to cope with the persuasion attempt, which does not mean per se that people are more negative when the applied persuasion techniques are clear. Future research could investigate under which circumstances induced knowledge of the persuasion tactic does and does not translate into negative persuasion outcomes.

A first step in this investigation could be to test the effects of behaviorally targeted native advertising on persuasion knowledge and persuasion among various groups of people. Previous studies demonstrated that beliefs about OBA strategies and related concerns differ between groups of people (e.g., Smit, et al., 2014). The current study investigated the impact of behaviorally targeted native advertising among a relatively homogeneous group of people between 18- and 35-years-old. Compared to other age groups, this group might hold less negative beliefs with regard to OBA and the collection of personal data for commercial use. Future research could investigate age and other important consumer characteristics that correlate with beliefs towards OBA strategies as moderators for the relation between the understanding of OBA tactics and persuasion outcomes.

Implications

The present study has important implications for both theory and practice. Theoretically, this was the first study to empirically test the explanatory mechanisms of online behavioral advertising strategies in the context of native advertising. The activation of people's understanding of OBA as a persuasive tactic did not explain the effects of behaviorally targeted native advertising. This means that people seem to give more weight to the benefits of OBA (e.g., personal relevance) than to the possible risks (e.g., understanding that personal data is used), and thus these findings provide valuable insights into the theoretical explanations for behaviorally targeted native advertising effects.

For practice, the findings of this study suggest that the use of behaviorally targeted native advertising may have positive effects on video and brand outcomes through higher perceived relevance. Thus, when advertisers decide on their media mix, they could consider increasing the budget to add behavioral strategies to native advertising formats to enhance persuasion outcomes.

For policy makers, the findings of the current study indicate that

through higher perceived relevance targeting based on online behavior can have persuasive effects. In addition, when exposed to this type of advertising, people seem to realize that it is based on previous online behavior, even though a relatively new form of advertising (i.e., native) is used. However, caution is needed, because it remains uncertain whether people understand the full implications of using their online behavioral data for targeting native advertising.

Data statement

Data are available upon request.

Declaration of competing interest

No conflicts of interest.

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