



International Journal of Advertising

The Review of Marketing Communications

ISSN: 0265-0487 (Print) 1759-3948 (Online) Journal homepage: <https://www.tandfonline.com/loi/rina20>

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To cite this article: Sophie C. Boerman, Tina Tessitore & Céline M. Müller (2020): Long-term effects of brand placement disclosure on persuasion knowledge and brand responses, International Journal of Advertising, DOI: [10.1080/02650487.2020.1775036](https://doi.org/10.1080/02650487.2020.1775036)

To link to this article: <https://doi.org/10.1080/02650487.2020.1775036>



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Published online: 08 Jun 2020.



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Long-term effects of brand placement disclosure on persuasion knowledge and brand responses

Sophie C. Boerman^a, Tina Tessitore^{b,c} and Céline M. Müller^a

^aAmsterdam School of Communication (ASCoR), University of Amsterdam, Amsterdam, The Netherlands; ^bIESEG School of Management, Lille, France; ^cLEM-CNRS 9221, Lille, France

ABSTRACT

Various studies have examined the short-term effects of brand placement disclosures. This study aims to (1) replicate previously identified short-term effects of brand placement disclosures on persuasion knowledge and brand responses, and, more importantly, (2) examine whether these effects persist, diminish, or grow in the long-term. We conducted an online experiment ($N = 208$) in which we compared the effects of including a disclosure (vs. no disclosure) in two waves (short-term, measured directly after watching the programme vs. long-term, measured two to three weeks later). Our results show that a disclosure increases ad recognition (i.e. conceptual persuasion knowledge) immediately after exposure, and that this effect persists even a few weeks after watching the programme. Moreover, a disclosure enhances brand memory via ad recognition, in both the short- and the long-term. However, resistance effects on skepticism (attitudinal persuasion knowledge), brand attitude and purchase intention are neither replicated in the short-term nor found in the long-term.

ARTICLE HISTORY

Received 23 August 2019
Accepted 18 May 2020

KEYWORDS

Brand placement; disclosure; persuasion knowledge; long-term effect; brand memory; brand attitude; purchase intention

Introduction

With the continuing success of online, individually controlled television, such as Netflix, brand placement is still an important advertising tool. Brand placement is defined as ‘the purposeful incorporation of brands into editorial content’ (Van Reijmersdal, Neijens, and Smit 2009, 429). Its success arises from the fact that it overcomes avoidance (e.g. zapping or zipping) by integrating advertising into content people want to consume, and reduces critical processing by hiding the persuasive intent (Balasubramanian, Karrh, and Patwardhan 2006; Cain 2011). However, the capacity of brand placement to blur the boundaries between editorial and commercial content has also led to concerns about possible subconscious persuasion and deception (e.g. Cain 2011; Kuhn, Hume, and Love 2010). Research has indeed shown that brand

CONTACT Sophie C. Boerman  s.c.boerman@uva.nl  Amsterdam School of Communication (ASCoR), University of Amsterdam, PO Box 15791, 1001 NG Amsterdam, The Netherlands

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placement can affect viewers' perceptions of the advertised brand and product choice, even when they do not remember seeing this placement (e.g. Cowley and Barron 2008; Law and Braun 2000; Matthes, Schemer, and Wirth 2007; Van Reijmersdal, Neijens, and Smit 2007).

To guarantee fair communication and to protect consumers against unconscious persuasion, the EU has developed regulations that obligate the disclosure of brand placement in television programmes (Audiovisual Media Services Directive 2010). Although the general rule of the AMSD to disclose brand placement applies to all EU countries, specific rules governing the nature of this disclosure (i.e. wording, timing, duration, etc.) vary between countries. This has resulted in the employment of a variety of disclosures (such as logos, various texts, or mentions of sponsors in end credits; Boerman and Van Reijmersdal 2016). Similar measures have also been discussed in the US (Cain 2011).

Since the introduction of disclosures, various studies have examined the effects of brand placement disclosures in television programmes (e.g. Boerman, Van Reijmersdal, and Neijens 2012, 2014, 2015; Campbell, Mohr, and Verlegh 2013; Janssen et al. 2016), movies (e.g. Chan, Lowe, and Petrovici 2016; Guo et al. 2018; Tessitore and Geuens 2013, 2019; Van Reijmersdal 2016; Van Reijmersdal, Tutaj, and Boerman 2013), music videos (Matthes and Naderer 2016) and online videos (Boerman and Van Reijmersdal 2020; Choi et al. 2018; De Jans, Cauberghe, and Hudders 2018). These studies have consistently shown that disclosures can help to activate persuasion knowledge (PK), influence the processing of brand placements, and (consequently) impact cognitive, affective, and conative brand responses (Boerman and Van Reijmersdal 2016; Eisend et al. 2020).

Despite the significant increase in research into disclosure effects, existing studies have only looked at the effects of disclosures immediately after exposure to the stimulus. Hence, we only know that disclosures affect people's short-term responses to brand placement. This study aims to contribute to the existing literature by (1) replicating previously identified short-term effects of brand placement disclosures on PK and brand responses, and, more importantly, (2) examining whether these effects persist, diminish, or grow in the longer term. We present an online experiment ($N=208$) in which we compare the effects of including a disclosure (vs. no disclosure) on conceptual PK (i.e. recognition of the advertising in the programme), attitudinal PK (i.e. skepticism towards the brand placement), brand memory, brand attitude and purchase intention, in two waves (short-term, measured directly after watching the programme vs. long-term, measured two to three weeks after watching the programme).

Short- and long-term disclosure effects on cognitive responses

The main goal of disclosures is to undo the 'blurring of editorial and commercial content' and help television viewers to recognize brand placements. In doing so, it aims to activate people's PK. PK is knowledge that people develop during their life about persuasion attempts, and tactics that can be activated and used to cope with such attempts (Friestad and Wright 1994). PK can be divided into conceptual (i.e. recognition of advertising; understanding of persuasive intent, source and tactics) and

attitudinal (i.e. critical evaluations of the persuasion attempt) dimensions (Boerman et al. 2018; Rozendaal et al. 2011).

In the short-term, disclosures can indeed inform viewers of brand placement and stimulate the activation of conceptual PK while viewing television programmes, music videos and movies (e.g. Boerman, Van Reijmersdal, and Neijens 2012, 2015; Guo et al. 2018; Matthes and Naderer 2016; Tessitore and Geuens 2013; Van Reijmersdal et al. 2017). Although the measurement and operationalization of conceptual PK have varied between studies, all such research has measured whether including a disclosure increases viewers' realization that the television programme in question contains advertising. Some researchers have combined this realization with the understanding of the persuasive or commercial intent of the content (e.g. Campbell, Mohr, and Verlegh 2013; Tessitore and Geuens 2013; Van Reijmersdal et al. 2017). Because disclosures primarily aim to increase ad recognition, we focus on the recognition of advertising within a television programme to examine the activation of conceptual PK. The effect of the disclosure on conceptual PK seems to depend on several conditions, such as the disclosure's language, duration, and timing; and brand placement frequency (Tessitore and Geuens 2013; Van Reijmersdal 2016; Matthes and Naderer 2016; Boerman and Van Reijmersdal 2016).

When a disclosure is shown before the brand placement, the disclosure functions as an informational prime (Bennett, Pecotich, and Putrevu 1999; Boerman, Van Reijmersdal, and Neijens 2014). Several eye-tracking studies have found evidence of such a *priming effect* by showing that a disclosure increases the attention viewers pay to the placed brand in a television programme or movie (Boerman, Van Reijmersdal, and Neijens 2015; Guo et al. 2018; Smink, Van Reijmersdal, and Boerman 2017). In addition, Guo et al. (2018) measured movie viewers' electroencephalography (EEG) signals and found that a disclosure increased the attention viewers paid to the placed brand and instigated more thorough encoding, storage, and retrieval processes. As a consequence of this increased attention to the brand placement, disclosures have often been shown to increase brand memory in the short-term (Boerman, Van Reijmersdal, and Neijens 2012, 2015; Janssen et al. 2016; Guo et al. 2018; Matthes and Naderer 2016; Van Reijmersdal, Tutaj, and Boerman 2013).

Studies have also demonstrated that conceptual PK mediates this effect on brand memory (Boerman, Van Reijmersdal, and Neijens 2015; Matthes and Naderer 2016; Smink, Van Reijmersdal, and Boerman 2017). This is in line with the idea that the activation and application of PK require elaborate processing of a message, which in turn enhances the encoding, storage, and retrieval of the brand (Buijzen, Van Reijmersdal, and Owen 2010). Thus, based on extant theory and previous studies, we expect that, in the short-term, disclosures activate conceptual PK (i.e. increase ad recognition) and consequently increase brand memory.

To understand disclosure effects on cognitive responses in the long-term, we draw upon the *Human Associative Memory* (HAM) theory (Anderson and Bower 1973; Van Osselaer and Janiszewski 2001) and *Limited Capacity Model of Mediated Message Processing* (LC4MP; Lang 2000). Both theories assume that human memory consists of a network of interconnected nodes that activate each other in relevant contexts. Moreover, associations are strengthened when two stimuli are presented together. In

the context of brand placement, a television programme and brand may become part of the same associative network because the brand is presented during the programme (Verhellen et al. 2016; Van Reijmersdal, Neijens, and Smit 2007). The inclusion of a disclosure makes such associations between the programme and brand even more likely, as the disclosure emphasizes the explicit connection between the programme and the brand. The more a person links a new piece of information into this associative memory network, the more effectively that information is stored, and the more likely the person can retrieve this information later (Lang 2000).

However, human memory is volatile, and people tend to forget learned associations when these associations are no longer activated (Anderson and Bower 1973). In the long-term, time might weaken associations between the programme and the brand; thus, viewers' memories of the brand placement and the brand are likely to fade over time (Verhellen et al. 2016). This decline in memory is also reflected in Ebbinghaus' *forgetting curve* (see e.g. Murre and Dros 2015), which proposes that people forget information when they make no attempt to retain it. Therefore, we expect that, overall, levels of ad recognition and brand memory will decline over time.

Moreover, we expect that – despite this forgetting effect – a disclosure will still lead to better awareness of the brand placement in the programme in the long-term compared to when no disclosure is presented. We propose that including a disclosure in the programme will increase ad recognition. The related activation of PK requires the allocation of resources to the message, and causes more systematic processing, making it more likely that the viewer will encode, store, and retrieve the information (see the PCMC model; Buijzen, Van Reijmersdal, and Owen 2010). Hence, because a disclosure causes viewers to process the brand placement more thoroughly while watching a programme, we expect that levels of ad recognition will remain higher in the long-term due to the disclosure, compared to when no disclosure is presented. In line with this reasoning, prior research has shown that a 10-minute literacy training session explaining brand placement increased children's recognition and understanding of brand placement, and that these effects remained one week after this training took place (De Jans, Hudders, and Cauberghe 2017).

In addition, a disclosure is expected to strengthen associations between the programme and the brand (based on the HAM theory and LC4MP), and therefore we expect that brand memory will be relatively higher compared to when no disclosure is presented.

Thus, we expect that ad recognition and brand memory decrease over time, but that the indirect effect of the disclosure (vs. no disclosure) on brand memory – via ad recognition – persists. Therefore, we hypothesize:

H1: A disclosure (vs. no disclosure) increases ad recognition (a) in the short-term and (b) in the long-term.

H2: A disclosure (vs. no disclosure) increases brand memory via ad recognition (a) in the short-term and (b) in the long-term.

Short- and long-term disclosure effects on resistance

The inclusion of a disclosure can influence the way people respond to the related brand placement (i.e. attitudinal PK) and the advertised brand (i.e. brand attitude and

purchase intention). With respect to people's responses to the brand placement, one of the first studies to address brand placement disclosures found no significant effect of disclosures on movie viewers' skepticism towards the brand placement (Van Reijmersdal, Tutaj, and Boerman 2013). This could be because these direct effects depend on the specific disclosure and individual characteristics, and underlying mechanisms. For instance, research showed that a disclosure revealing the source and intent of an ad ('This advertising for Dr. Pepper is created to influence your buying behaviour') led to more negative attitudes towards the placement compared to no disclosure, whereas a disclosure citing only the source ('This is advertising for Dr. Pepper') did not achieve this effect (Van Reijmersdal 2016). In addition, a disclosure appeared to evoke more self-reported resistance towards the brand placement amongst television viewers who were able to use their cognitive resources (i.e. whose self-control was not depleted) to regulate their responses (Janssen et al. 2016).

Furthermore, negative responses to brand placement are likely to result from the activation of conceptual PK (e.g. an increase in ad recognition). Only when people recognize a persuasive message, they can use their PK to cope with this message. Specifically, disclosures instigate conceptual PK, which induces more critical feelings towards the placements (Boerman, Van Reijmersdal, and Neijens 2012), and critical processing of the sponsored content (Boerman, Van Reijmersdal, and Neijens 2014). Wei, Fischer, and Main (2008) also found that the activation of PK negatively affected people's evaluations of a radio show that implemented brand placement, as well as of the radio show host and the radio station itself.

With respect to the effect of disclosures on viewers' responses towards the advertised brand, the findings have been mixed. Some studies have found no significant effect of disclosures on brand attitude (e.g. Bennett, Pecotich, and Putrevu 1999; Dekker and Van Reijmersdal 2013; Matthes and Naderer 2016; Smink, Van Reijmersdal, and Boerman 2017), whereas others have found a direct negative effect (Campbell, Mohr, and Verlegh 2013; Guo et al. 2018; Wei, Fischer, and Main 2008). Several studies have also found indirect negative effects of disclosures on brand attitude, via negative perceptions of the brand placement (Boerman, Van Reijmersdal, and Neijens 2012; Van Reijmersdal 2016), and more attentive and critical processing of the brand placement (Boerman, Van Reijmersdal, and Neijens 2014, 2015; Guo et al. 2018). Furthermore, inclusion of a disclosure has been found to reduce viewers' intention to purchase the advertised product (Tessitore and Geuens 2013, 2019). However, as noted above, Janssen et al. (2016) only found negative effects on purchase intention amongst television viewers whose self-control was not depleted and who were thus able to regulate their responses. That is, when viewers' self-control was depleted and they used their cognitive resources for an unrelated self-control task, inclusion of a disclosure unintentionally increased persuasion (i.e. gave rise to more positive brand attitudes and purchase intentions; Janssen et al. 2016).

Despite some inconsistent findings in previous research, and the importance of moderating and mediating variables, the effects of disclosures on responses to the advertised brand seem to be primarily negative. These negative outcomes can be explained by the 'change-of-meaning' principle and resistance theories. The *Persuasion Knowledge Model* predicts that when a person realizes that a message has a persuasive

intent, s/he redefines this message and a 'change of meaning' will occur, upon which the person's response to this message fundamentally alters (Friestad and Wright 1994). In the context of brand placement, the realization that the programme is not only made for entertainment purposes but also has a commercial, persuasive goal can change the meaning of the programme and the brands in it. This change of meaning can in turn lead to detachment and resistance. In other words, activating PK to consider the persuasive intent of a brand placement interrupts the viewing experience, which motivates viewers to resist the message, resulting in lower brand attitudes in the short-term (Cowley and Barron 2008).

In addition, research in the field of forewarnings of persuasive messages in general (e.g. messages aimed at convincing viewers of a certain stance about a topic) has suggested that warnings of persuasive attempts induce defensive resistance (Allyn and Festinger 1961; McGuire and Papageorgis 1962; Petty and Cacioppo 1977). This can be explained by the *theory of psychological reactance* (Brehm 1966), which postulates that restricting people's freedom to think and act in a particular way motivates them to restore this freedom. One way to do so is to resist the persuasive message. Therefore, people tend to resist persuasion attempts when they recognize them as such (Sagarin et al. 2002; Wei, Fischer, and Main 2008). A warning of an impending persuasion attempt can increase recipients' motivation to defend their beliefs and enable them to arm themselves against this attempt (Allyn and Festinger 1961; Petty and Cacioppo 1986). These resistance effects usually only occur for topics that people are highly involved with, and do not occur for low-involvement topics, because people are more motivated and able to protect attitudes concerning high-involvement topics (Jacks and Devine 2000; Wood and Quinn 2003).

To understand the effects of disclosures of brand placements on resistance in the long-term, we draw upon theories concerning persuasion persistence and attitude change. These theories posit that a persuasive message can change attitudes over time by means of two distinct mechanisms: (1) *attitude decay*, where the greatest change in attitude happens immediately after the persuasive message and then begins to shift back to the initial attitude, or (2) a *sleeper effect*, which occurs when the persuasive impact of a message increases over time (Priester et al. 1999; Watts and Holt 1979; Cook and Flay 1978).

Research into the long-term effects of brand placements in television programmes has shown that brand placements can positively affect brand attitudes in the long-term (Verhellen et al. 2016; Sheehan and Guo 2005). More importantly, Verhellen et al. (2016) also found that this effect diminished over time: in their study, the effect was weaker after one month, compared to one week, after watching the programme. Thus, we expect that when *no disclosure* is provided, the effect of a brand placement on attitudes (i.e. skepticism towards the brand placement, and decreased brand attitude and purchase intentions) diminishes, reflecting *attitude decay*.

When a disclosure is provided, however, we expect a *sleeper effect* to occur in the long-term. The sleeper effect is described as 'a delayed increase in persuasion observed when the discounting cue becomes unavailable or dissociated from the

communication in memory of the message recipients' (Kumkale and Albarracín 2004, 143). More specifically, a discounting cue can be any cue that inhibits the initial persuasive effect of a message (Cook and Flay 1978); for example, a disclaimer stating that the presented information was false or biased. We propose that a brand placement disclosure can also function as such a discounting cue that lowers the credibility of the brand placement.

The *dissociation hypothesis* (Hovland and Weiss 1951; Kumkale and Albarracín 2004; Priester et al. 1999) posits that the presence of a discounting cue decreases acceptance of the persuasive message. However, over time, the association between the cue and the message fades, such that attitudes towards the message are no longer a result of the discounting cue but of the message itself, leading to *enhanced* persuasion of the message. Applying the dissociation hypothesis to brand placement disclosures in television programmes, this would mean that the disclosure immediately causes resistance towards the brand placement, but because people forget the disclosure or dissociate it from the programme over time, the resistance effect of the disclosure does not persist in the long-term.

In sum, we expect that when no disclosure is included, the positive effect of brand placement diminishes due to attitude decay, and that when a disclosure is present the negative effect of the disclosure diminishes due to the sleeper effect. We propose that a disclosure can be a discounting cue that decreases persuasion in the short-term, but over time becomes less salient and thus raises less resistance. Specifically, we expect that *in the short-term*, a disclosure will increase attitudinal PK (operationalized as skepticism towards the brand placement), and decrease brand attitudes and purchase intention, via the recognition of advertising in the programme. However, we propose that *in the long-term*, the negative effect of the disclosure on attitudes will be weaker. Therefore, we hypothesize that the differences between including versus not including a disclosure decrease in the long-term:

H3: A disclosure (vs. no disclosure) increases skepticism towards the sponsored content (mediated by ad recognition) (a) in the short-term, (b) but this effect diminishes over time.

H4: A disclosure (vs. no disclosure) decreases brand attitudes and purchase intentions (serially mediated by ad recognition and skepticism) (a) in the short-term, (b) but this effect diminishes over time.

Figure 1 presents our full conceptual model.

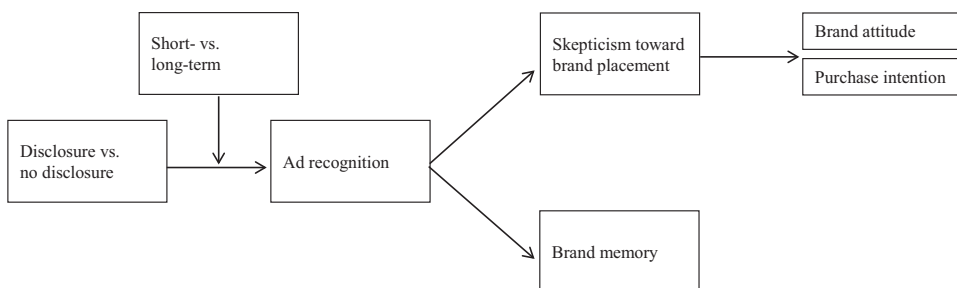


Figure 1. Conceptual model.

Table 1. Overview of experimental design.

	Disclosure presence	Time of measurement	
		Short-term (t1)	Long-term (t2)
1 (<i>n</i> = 52)	No disclosure	B, W	W
2 (<i>n</i> = 57)	No disclosure		B
3 (<i>n</i> = 44)	Disclosure	B, W	W
4 (<i>n</i> = 55)	Disclosure		B

Note: Participants filled out questionnaire only in cells that include letters. B indicates that data were included in between-subjects analyses (t1 *n* = 96, t2 *n* = 112). W indicates that data were included in the within-subjects analyses (*n* = 96).

Method

Sample and design

We conducted an online experiment with a 2 (disclosure: no disclosure vs. disclosure) × 2 (time of measurement: short- and long-term [t1 and t2] vs. only long-term [t2]) design. All participants watched a fragment of a television programme – with or without the disclosure – in t1, and filled out the complete questionnaire in t2. Participants that were in the short- and long-term conditions also filled out the full questionnaire immediately after watching the programme (t1). Participants in the long-term-only conditions only answered questions regarding demographics (age, gender, education and country) after watching the programme (t1). [Table 1](#) provides an overview of the experimental design and groups.

We used both a between-subjects and a within-subjects design to rule out potential biases inherent to each design. Whereas our within-subjects design served to rule out any potential confounding effects caused by natural variance between individuals, the between-subjects design allowed us to overcome any learning effect that might arise from exposing participants twice to the same measurements. The latter aim is highly relevant in our research context as the purpose of a disclosure is to educate consumers, and thus any other learning effects need to be controlled for.

Data collection took place in November and December 2018, with a two- to three-week delay between t1 and t2. Previous research into the long-term effects of brand placement have used a one-month delay, and found that brand placement affects brand attitudes in the long-term, but also suggested that this long-term effect is weaker compared to short-term effects (Verhellen et al. 2016; Sheehan and Guo 2005). Therefore, we chose a timeframe that was longer than one week, to ensure a long-term effect could happen, but shorter than one month, to ensure the effect of the brand placement did not diminish too significantly.

Participants were recruited via the crowdsourcing platform Prolific based on whether they fulfilled the criteria of having British or American nationality and being fluent in English. Prolific offers several important advantages compared to other platforms, such as MTurk. For example, it can provide a more diverse sample, higher data quality, pre-screening, and – most importantly for this study – whitelists to enable longitudinal research (Palan and Schitter 2018; Peer et al. 2017).

Participants were paid £4.20 for participating in both waves. Payment was made only after completion of both waves, which kept the attrition rate low (i.e. 8.4%). Specifically, 297 eligible participants completed wave 1, of whom 25 dropped out in

wave 2. In total, 272 participants filled out both waves. Participants for whom the video did not work, who reported a failure to understand the video, or who failed one or more attention checks were excluded. The final sample consisted of 208 participants ($M_{Age} = 37.32$, $SD_{Age} = 12.66$, 67% female, 92% British) who were randomly assigned to one of the four conditions.

Pre-test

We conducted a pre-test to ensure our selected television programme fragment was not from an overly popular television programme (so that respondents were unlikely to have already seen it), that the brand placement was not too prominent (making a disclosure unnecessary) or too subtle (meaning that the placement might be overlooked), and that it was for a lesser-known brand (limiting pre-existing brand associations to be able to influence attitudes and purchase intentions). In this pre-test we exposed 18 participants (67% female, $M_{age} = 31.94$, age range 23–62) to video fragments from the series *Orange is the New Black*, which included advertising for Dunkin' Donuts ($n = 10$), or to a fragment from the series *Crazy Ex-Girlfriend*, which included advertising for LUNA Bars ($n = 8$). After watching the fragment, we measured participants' programme familiarity ('Did you already know this programme?' 0 = No, 1 = Yes), brand recall ('Do you recall seeing any brands in the video?' 0 = No, 1 = Yes and named correct brand), and brand familiarity ('The fragment contained product placement by Dunkin' Donuts/LUNA Bars. Did you already know this brand?' 0 = No, 1 = Yes). The pre-test showed that the *Crazy Ex-Girlfriend* fragment was more suitable because brand recall was not too high (63%, vs. 70% recall of Dunkin' Donuts, $\chi^2(1) = 0.11$, $p = .737$), and the small sample was not familiar with the brand (0%, vs. 90% familiar with Dunkin' Donuts, $\chi^2(1) = 14.40$, $p < .001$) or programme (0%, vs. 70% familiar with *Orange is the New Black*, $\chi^2(1) = 9.16$, $p = .002$).

Procedure and stimulus materials

Participants were told that they were participating in a research project on people's responses to television programmes. In t1, all participants were exposed to one version of a five-minute fragment from the Netflix comedy series *Crazy Ex-Girlfriend*, which included a placement of the brand LUNA Bar. The brand placement scene shows a woman sitting in an office lunch room. A male colleague enters the room and grabs a LUNA Bar from the cupboard. They start arguing about whether LUNA Bars are only suitable for women and he calls the brand's customer service to find out whether this is the case. The fragments in the conditions were identical except for the presence of a disclosure ('This programme contains advertising for LUNA Bars'), which was displayed for six seconds in the beginning of the video (or was not included).

Participants in the long-term-only condition filled out questions regarding demographic variables after watching the fragment and were thanked for their participation in the first part of the study. All participants were invited to participate in the second part of the study, two to three weeks later. In this second part they all received the same questionnaire, which first reminded them that we had asked them to watch a

video fragment two weeks ago. The questionnaire then asked about their attitude towards the programme and the broadcaster (Netflix); and their ad recognition, brand memory, brand attitude, purchase intention, skepticism, and appropriateness. It ended with the control variables and manipulation check. Participants that were in the short- and long-term condition also filled out the full questionnaire in t1, immediately after watching the fragment.

Measures

Attention checks

As a first check, we asked participants whether the video worked (four participants said no) and whether they understood the fragment (11 participants said no). To test whether participants had carefully read the instructions, we used a question introduced by Kees et al. (2017): 'Research shows that people, when answering questions, prefer not to pay attention and minimize their effort as much as possible. If you are reading this question, please select "none of the above" on the next question. What was this study about?' Response options included 'Managing body weight', 'Advertising in online television programmes', 'Video games' and 'None of the above'. In addition, we included the instruction to select a specific answer within the scale items ('Please select answer option 6 here') twice. In total, 53 participants failed one or more of our attention checks and thus were excluded from the final sample.

Mediators

Ad recognition. To measure the activation of conceptual PK, we measured participants' recognition of the advertising in the programme with one item (Boerman, Van Reijmersdal, and Neijens 2012; Guo et al. 2018; Matthes and Naderer 2016). In t1, participants were asked to indicate, on a seven-point scale (1 = *strongly disagree*, 7 = *strongly agree*), the extent to which they agreed with the statement 'The fragment I just watched contained advertising' ($M = 4.79$, $SD = 2.15$). In t2, we asked them to indicate the extent to which they agreed or disagreed with the statement about the fragment they had watched two weeks ago: 'The fragment I watched contained advertising' ($M = 4.68$, $SD = 2.04$).

Skepticism. To capture changes in attitudinal PK, we measured one of the evaluative components of the Persuasion Knowledge Scales of Sponsored Content: skepticism towards the sponsored content (Boerman et al. 2018).¹ Skepticism was assessed on seven-point semantic differential scales by asking participants to respond to the statement 'I think that showing LUNA Bars in *Crazy Ex-Girlfriend* is ...' followed by five items (*dishonest–honest*, *not trustworthy–trustworthy*, *incredible–credible*, *not truthful–truthful*, and *insincere–sincere*). The mean score of the items was used as a measure of skepticism, with high scores corresponding to more skeptical evaluations (t1: $\alpha = .93$, $M = 3.84$, $SD = 1.18$; t2: $\alpha = .94$, $M = 3.81$, $SD = 1.20$).

Dependent variables

Brand memory was assessed with a brand recognition measure that asked participants to indicate which of six brands they had seen in the fragment (Guo et al. 2018; Van

Reijmersdal, Tutaj, and Boerman 2013). Answers were coded 1 when participants indicated that they had seen LUNA Bars, and 0 when participants said that they had seen one of the other brands or 'None of the above'² (t1: 88.5% brand recognition; t2: 68.8%).

Brand attitude was measured by telling participants that the fragment they had just watched showed LUNA Bars, and then asking 'What is your opinion of the brand LUNA Bar?' followed by six seven-point semantic differential scales: *bad-good*, *negative-positive*, *dislike-like*, *unpleasant-pleasant*, *unfavorable-favorable* and *poor quality--high quality* (Boerman, Van Reijmersdal, and Neijens 2012; Bruner 2009). In t2, we introduced the question about the brand by telling participants: 'The fragment of *Crazy Ex-Girlfriend* you watched two weeks ago showed LUNA Bars. The next questions are about the brand LUNA Bar and its placement in the show'. The mean score of the six items was used as a measurement of brand attitude (t1: alpha = .95, $M = 4.23$, $SD = 0.96$; t2: alpha = .96, $M = 4.30$, $SD = 0.97$).

Purchase intention was measured by asking participants to indicate, on a seven-point scale (1 = *Very unlikely*, 7 = *Very likely*), 'Imagine you are in the supermarket, and you see the brand LUNA Bar. How likely are you to buy this brand?' (Tessitore and Geuens 2019; t1: $M = 3.06$, $SD = 1.73$; t2: $M = 3.15$, $SD = 1.61$).

Control variables

As control variables, we measured participants' programme familiarity ('You just watched a fragment of the TV series *Crazy Ex-Girlfriend*. The next questions are about the programme. Did you already know this programme before watching the fragment?' 91.3% said no), brand familiarity ('Did you know the brand LUNA Bar before?' 88.0% said no), brand consumption frequency ('How often do you eat LUNA Bars?' 95.2% = *Never*, 3.4% = *Yearly*, 1.4% = *Monthly*), gender, age, country, and education.

Manipulation check

As a manipulation check, we gave a list of four different types of disclosures and asked participants whether they recalled seeing any of the disclosures of advertising in the programme (they could also select 'None of the above'). Correct recognition of the disclosure significantly differed between the no-disclosure and disclosure conditions, in t1: $\chi^2(1) = 9.70$, $p = .002$, and in t2: $\chi^2(1) = 59.02$, $p < .001$. In the disclosure condition, correct disclosure recognition was 70.5% in t1 and 43.4% in t2. In the no-disclosure condition, the majority of participants (t1: 94.2%, t2: 92.7%) correctly indicated that they had not seen a disclosure. The low disclosure memory scores are in line with previous studies (Boerman and Van Reijmersdal 2016). Based on these findings, we can conclude that our manipulation was successful, and that disclosure memory decreased over time.

Results

Randomization

The four experimental groups did not differ regarding programme familiarity, $\chi^2(3) = 4.43$, $p = .219$, brand familiarity, $\chi^2(3) = 2.76$, $p = .430$, brand consumption frequency,

$\chi^2(6) = 3.44, p = .752$, gender, $\chi^2(6) = 7.17, p = .306$, age, $F(3, 204) = 0.13, p = .941$, country, $\chi^2(3) = 2.75, p = .432$ and education, $\chi^2(18) = 12.18, p = .838$. This means that the randomization between conditions was successful, and random noise caused by potential individual-related differences between conditions was minimal.

Effects of disclosure and measurement timing

Our experiment combined both a between- and a within-subjects design. Because the between-subjects comparison overcomes any testing effect that arises from exposing participants twice to the same measurements, we used this subsample to test our hypotheses. Afterwards, we ran within-subjects analyses to check whether we could replicate the between-subjects results, while bearing in mind the potential learning effects that occurred in t2 due to pre-measurement in t1.

Between-subjects results

As presented in Table 1, the between-subjects analyses compared the answers given by participants in t1 ($n=96$) to those who filled out our questionnaire only in t2 ($n=112$).

We first ran a MANOVA, with disclosure presence (no disclosure vs. disclosure) and measurement timing (short- vs. long-term) as factors, and ad recognition, skepticism, brand attitude, and purchase intention as dependent variables. Table 2 shows the means for the four conditions.

Results showed a significant effect of disclosure presence (Wilks' lambda = .81, $F(4, 201) = 11.81, p < .001, \eta p^2 = .19$) and of measurement timing (Wilks' lambda = .87, $F(4, 201) = 7.26, p < .001, \eta p^2 = .13$) on PK and brand responses.

Separate analyses revealed a main effect of disclosure presence on ad recognition: the disclosure ($M=4.98, SD=1.96$) significantly increased ad recognition compared to in the no-disclosure condition ($M=3.31, SD=1.86$), $F(1, 204) = 47.04, p < .001, \eta p^2 = .19$. In addition, there was a significant main effect of measurement timing: ad recognition was significantly higher in the short-term (t1: $M=4.79, SD=2.15$) than in the long-term (t2: $M=3.52, SD=1.84$), $F(1, 204) = 28.37, p < .001, \eta p^2 = .12$. The interaction between disclosure presence and measurement timing was not significant, $F(1, 204) = 0.14, p = .712$. The non-significant interaction showed that, despite the lower ad recognition in the long-term (vs. short-term), the disclosure (vs. no disclosure) did not have a stronger or weaker effect in the short-term (t1: disclosure $M=5.77$, no

Table 2. Between-subjects effects of disclosure presence and measurement timing.

	No disclosure		Disclosure	
	Short-term	Long-term	Short-term	Long-term
PK				
Ad recognition	3.96 (2.07)	2.72 (1.42)	5.77 (1.82)	4.35 (1.86)
Skepticism	3.72 (1.05)	3.76 (1.15)	3.93 (1.31)	3.68 (1.27)
Brand responses				
Brand memory	90.4%	36.8%	86.4%	58.2%
Brand attitude	4.20 (0.84)	4.31 (0.77)	4.27 (1.09)	4.38 (0.95)
Purchase intention	3.04 (1.63)	3.00 (1.55)	3.09 (1.87)	3.29 (1.71)

Note: Scores for brand recognition represent percentages of people that recognized the brand. For all other variables scores represent means with standard deviations in parentheses.

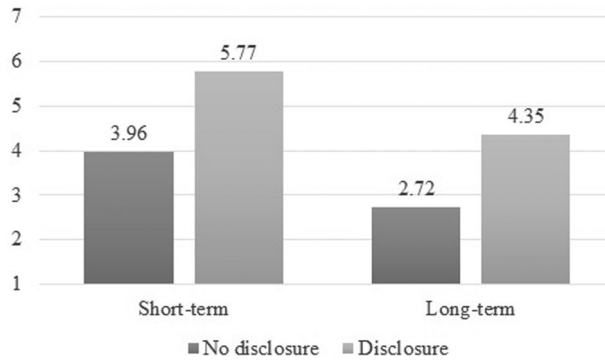


Figure 2. Between-subjects effect of disclosure on ad recognition in short- and long-term.

disclosure $M=3.96$) versus in the long-term (t2: disclosure $M=4.35$, no disclosure $M=2.72$). **Figure 2** illustrates that ad recognition was lower in the long-term, but the effect of the disclosure remained the same. H1 is thus supported.

All other main effects and interaction effects were not significant (all p 's > .326). This means that the disclosure and measurement timing did not directly affect skepticism, brand attitude, or purchase intention.

To test the effects of disclosure on brand memory, we first ran a logistic regression with disclosure presence and measurement timing as factors and brand recognition as dependent variable, $-2 \log$ likelihood = 217.76, Nagelkerke $R^2 = .29$, $\chi^2(3) = 47.94$, $p < .001$. This analysis showed no significant direct effect of disclosure presence ($b = -0.40$, $se = 0.64$, $OR = 0.67$, $p = .540$), but a significant negative effect of measurement timing ($b = -2.78$, $se = 0.55$, $OR = 0.06$, $p < .001$). As expected, brand memory declined over time (t1: 88.5%, t2: 47.3%).

To test the moderated mediation effect of disclosure and timing via ad recognition on brand memory (H2), we ran model 7 in PROCESS v3.3 (Hayes 2017) with 10,000 bootstrap samples. We included the disclosure condition (0 = no disclosure, 1 = disclosure) as the independent variable, measurement timing (0 = t1, 1 = t2) as the moderator, and ad recognition as the mediator. **Table 3** presents the outcomes of this analysis, and **Figure 3** depicts the tested moderated mediation model.

The results show significant positive indirect effects of the disclosure on brand memory via ad recognition in the short-term (t1 indirect effect = 0.69, boot $se = 0.22$, 95% CI [0.33, 1.17]) and in the long-term (t2 indirect effect = 0.62, boot $se = 0.21$, 95% CI [0.29, 1.09]). A disclosure increased ad recognition ($b = 1.81$, $se = 0.37$, $p < .001$), which consequently increased brand memory ($b = 0.38$, $se = 0.09$, $p < .001$). Neither the interaction between disclosure presence and measurement timing ($b = -0.19$, $se = 0.50$, $p = .712$), nor the index of moderated mediation, were significant (index = -0.07 , boot $se = 0.20$, 95% CI [-0.44, 0.35]). Hence, H2 is supported: a disclosure increases brand memory via ad recognition, both in the short- and long-term.

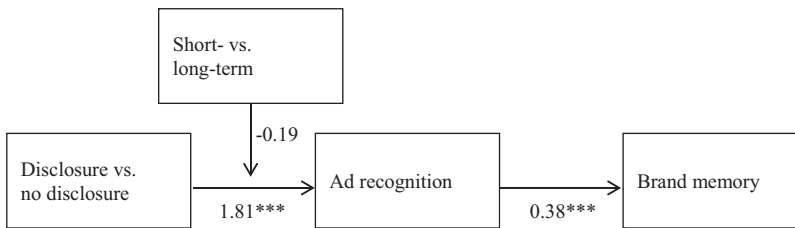
To test H3, we ran model 7 in PROCESS v3.3 with disclosure presence as the independent variable, measurement timing as the moderator, ad recognition as the mediator, and skepticism as the dependent variable. The results (see **Table 3**) reveal no significant indirect effects of disclosure inclusion on skepticism in the short-term (t1 indirect effect = -0.08 , boot $se = 0.08$, 95% CI [-0.25, 0.08]) or in the long-term (t2

Table 3. Mediation effects of the disclosure (vs. no disclosure) on brand memory and skepticism via ad recognition, moderated by measurement timing.

	Disclosure > Ad recognition	Ad recognition > DV	Direct effect	Indirect effect	Index of moderated mediation
Brand memory	1.81 (0.37)***	0.38 (0.09)***	-0.22 (0.34)	t1: 0.69 (0.22) CI [0.33, 1.17] t2: 0.62 (0.21) CI [0.29, 1.09]	-0.07 (0.20) CI [-0.44, 0.35]
Skepticism	1.81 (0.37)***	-0.04 (0.04)	0.00 (0.18)	t1: -0.08 (0.08) CI [-0.25, 0.08] t2: -0.07 (0.07) CI [-0.22, 0.07]	0.01 (0.03) CI [-0.05, 0.08]

Note: Table presents unstandardized b-coefficients with bootstrap standard errors in parentheses. DV = dependent variable corresponding to row, CI = 95% bootstrap confidence intervals. Significant effects are shown in bold.

*** $p < .001$.

**Figure 3.** Tested moderated mediation on brand memory (H2).

Note: *** $p < .001$. Indirect effects were significant in short- and long-term.

indirect effect = -0.07 , *boot se* = 0.07 , 95% CI [$-0.22, 0.07$]). This means that H3 is not supported.

To test the serial mediation proposed in H4, we ran model 83 in PROCESS v3.3 twice, once for brand attitude and once for purchase intention. We included disclosure presence as the independent variable, measurement timing as the moderator, and ad recognition and skepticism as serial mediators. Table 4 presents the outcomes of these analyses.

The analysis with brand attitude as the dependent variable revealed no significant serial mediation in the short- (t1 *indirect effect* = -0.03 , *boot se* = 0.04 , 95% CI [$-0.11, 0.03$]) or the long-term (t2 *indirect effect* = -0.03 , *boot se* = 0.03 , 95% CI [$-0.10, 0.03$]). All other possible mediations (disclosure > ad recognition > brand attitude, and disclosure > skepticism > brand attitude) were also insignificant.

For purchase intention, again, none of the possible indirect effects were significant (t1 *indirect effect* = -0.06 , *boot se* = 0.07 , 95% CI [$-0.20, 0.06$]; t2 *indirect effect* = -0.05 , *boot se* = 0.06 , 95% CI [$-0.18, 0.05$]).

This means that ad recognition did not influence viewers' attitudinal PK, or affective and conative brand responses in the short- or long-term. H4 is thus not supported.³

Within-subjects results

To check whether we could replicate the above effects if we ruled out any random noise arising from individual differences between conditions, we also ran within-

Table 4. Serial mediation effects of the disclosure (vs. no disclosure) on brand attitude and purchase intention via ad recognition and skepticism, moderated by measurement timing.

	Disclosure > Ad recognition	Ad recognition > Skepticism	Skepticism > DV	Direct effect	Indirect effect	Index of moderated mediation
Brand attitude	1.81 (0.37)***	-0.04 (0.04)	0.40 (0.05)***	0.07 (0.12)	t1: -0.03 (0.04) CI [-0.11, 0.03] t2: -0.03 (0.03) CI [-0.10, 0.03]	0.00 (0.01) CI [-0.03, 0.03]
Purchase intention	1.81 (0.37)***	-0.04 (0.04)	0.77 (0.08)***	0.18 (0.21)	t1: -0.06 (0.07) CI [-0.20, 0.06] t2: -0.05 (0.06) CI [-0.18, 0.05]	0.01 (0.02) CI [-0.04, 0.06]

Note: Table presents unstandardized b-coefficients with bootstrap standard errors in parentheses. DV = dependent variable corresponding to row, CI = 95% bootstrap confidence intervals. Significant effects are bold.
*** $p < .001$.

subjects analyses that compared the answers given by participants who filled out the questionnaire in both t1 and t2 ($n=96$; see Table 1). We focus here only on results that deviate from those found in the between-subjects analyses (see Online Appendix for more details).

We first ran multiple mixed ANOVAs, with disclosure presence (no disclosure vs. disclosure) as the between-subjects factor and measurement timing (short- vs. long-term) as the within-subjects factor, and ad recognition, skepticism, brand attitude, and purchase intention as dependent variables. The only result that differed from those of the between-subjects analysis was for ad recognition. Unlike the between-subjects results, we found that ad recognition was significantly *lower* (instead of higher) in the short-term ($M=4.79$, $SD=2.15$) compared to the long-term measures ($M=6.03$, $SD=1.29$), $F(1, 94) = 40.35$, $p < .001$, $\eta p^2 = .30$. Moreover, we found a significant interaction effect between disclosure presence and measurement timing, $F(1, 94) = 5.17$, $p = .025$; $\eta p^2 = .05$. Simple effects analyses showed that in both the short-term, $F(1, 94) = 20.43$, $p < .001$, and the long-term, $F(1, 94) = 14.69$, $p < .001$, ad recognition was higher when the disclosure was present than when it was absent. However, the effect size was smaller in the long-term ($\eta p^2 = .14$; t2: disclosure $M=6.55$, no disclosure $M=5.60$) compared to the short-term ($\eta p^2 = .18$; t1: disclosure $M=5.77$, no disclosure $M=3.96$).

These results show that ad recognition increased with time and in the presence of the disclosure, while the difference between the disclosure and no-disclosure conditions decreased in the long-term. This result can be explained by a testing effect. All respondents (in the disclosure and no-disclosure conditions) received multiple questions about the brand placement in t1, which increased their ad recognition in t2. Overall, these results support H1 and provide evidence of a learning effect.

To test within-subjects effects on brand memory, we ran a generalized estimating equations (GEE) model with disclosure presence as the between-subjects factor, measurement timing as the within-subjects factor, and brand recognition as the dependent variable. The GEE model showed a significant main effect of measurement timing on brand memory, which is opposite to the between-subjects effect, Wald $\chi^2(1) = 4.83$, $p = .028$. Within subjects, brand memory *increased* (rather than decreased) over time ($b=0.98$, $se=0.57$, $odds\ ratio=2.66$, $probability_{t1} = .89$, $probability_{t2} = .94$), again suggesting a learning effect. This means that H2 is not supported based on the within-subjects analyses. Additionally, the within-subjects analyses revealed the same insignificant effects on brand attitude and purchase intention and thus also reject H3 and H4.

Conclusion and discussion

Conclusions

Despite the significant increase in research addressing disclosures of hidden forms of advertising, such as brand placement, previous studies have focussed only on short-term effects. This study aimed to replicate previously identified short-term effects of brand placement disclosures on PK and brand responses, and examine whether these

effects persist, diminish, or grow in the long-term. The results of our online experiment lead to three main conclusions.

First, our results replicate prior findings (e.g. Boerman, Van Reijmersdal, and Neijens 2012, 2015; Guo et al. 2018; Matthes and Naderer 2016; Tessitore and Geuens 2013) by showing that including a disclosure achieves the goal of increasing ad recognition in the short-term. More importantly, we find that this disclosure effect persists, even two to three weeks after watching the programme. Although the mean levels of ad recognition are lower in the long-term, the effect of the disclosure, compared to no disclosure, is still as strong as it is in the short-term. This means that the disclosure does help viewers to recognize brand placement in television programmes, and that this awareness is still higher in the long-term because of the disclosure.

Second, we find that a disclosure increases brand memory via ad recognition in the short-term, which is consistent with previous findings (Boerman, Van Reijmersdal, and Neijens 2015; Matthes and Naderer 2016; Sminck, Van Reijmersdal, and Boerman 2017). More importantly, although brand memory is generally lower in the long-term, the priming effect of the disclosure persists even after two to three weeks.

Third, previous studies have suggested that recognizing hidden advertising causes resistance to the persuasive message and diminishes its persuasive outcomes (e.g. Boerman, Van Reijmersdal, and Neijens 2012; Wei, Fischer, and Main 2008; Petty and Cacioppo 1977). Our study does not replicate such resistance effects: the disclosure neither increased skepticism towards the brand placement (i.e. attitudinal PK), nor influenced brand attitudes or purchase intentions in the short- or long-term.

Theoretical implications

This study is the first to examine the long-term effects of brand placement disclosures and our findings have some important theoretical implications. Our study suggests that effects of brand placement disclosures on cognitive responses (i.e. conceptual PK and brand memory) prevail over time, whereas effects on attitudinal and conative responses are not found at all. This implies that cognitive effects of disclosures are relatively stable, whereas attitudinal responses are likely contingent upon underlying mechanisms and boundary conditions.

In line with Ebbinghaus' forgetting curve, we find that cognitive responses fade: ad recognition, brand memory and disclosure memory all declined over time. However, we also find evidence for the idea that including a disclosure helps to activate PK, which requires more thorough processing of the brand placement (PCMC model, Buijzen, Van Reijmersdal, and Owen 2010). This activation of PK and more thorough processing may help viewers to form mental connections between the brand and the television programme in which it is featured (HAM theory [Anderson and Bower 1973; Van Osselaer and Janiszewski 2001] and LC4MP [Lang 2000]), which indirectly results in better remembrance of the brand placed within the programme, even after two to three weeks. These findings also provide additional evidence for the priming effect of disclosures.

Our findings do not provide evidence of reactance (Brehm 1966) in the short-term, nor of a sleeper effect (Watts and Holt 1979; Cook and Flay 1978) in the long-term.

Although various studies in the field of disclosures and the activation of PK have shown that recognizing a persuasion attempt may lead to a change of meaning or to resistance, these mechanisms did not occur in this study. The disclosure did help people to realize that the programme contained advertising, and thus a persuasion attempt, but this did not lead to resistance towards this brand placement or brand. This finding is consistent with research into disclosures in music videos (Matthes and Naderer 2016) and opens a new perspective on disclosure effects. The findings regarding the lack of resistance represent an important addition to the literature, as they show that disclosures do not always instigate more critical processing of brand placement.

Regarding the sleeper effect, we did find some initial evidence for the dissociation hypothesis: disclosure memory indeed declined (70.5% in t1 vs. 43.4% in t2), indicating possible dissociation from the disclosure and the programme in the long-term. However, because the disclosure did not evoke resistance in the first place, a sleeper effect did not occur: attitudes did not increase in the long-term. In addition, because attitudes did not differ between the disclosure conditions, we did not find evidence of attitude decay. These findings may indicate that disclosures do not function as discounting cues in general, or that our disclosure did not work as a discounting cue in the particular programme because it did not change the credibility of the brand placement.

Implications for future research

Although the main aim of disclosures is to increase awareness of advertising and not necessarily to induce resistance, the lack of resistance effects in our study is important and novel. The lack of resistance effects could have been due to various reasons. As brand placement disclosures were introduced in the EU as far back as 2010 (AMSD 2010), it may be that they have lost their novelty effect. The majority of our sample (91%) was from the UK, where Ofcom introduced the obligatory disclosure of brand placement in 2011 (Ofcom 2011). This may mean that British television viewers have become used to the presence of disclosures and to brand placements in television programmes, and thus may be less critical towards them.

The lack of resistance could also have been due to our decision to use a comedy series, as audience appreciation of brand placement differs between genres (Neijens and Smit 2003). It could also have been due to the way the brand was placed (Matthes and Naderer 2016): viewers may have liked the way the brand was incorporated into the story. Furthermore, resistance effects are more likely for topics with which people are highly involved (Jacks and Devine 2000; Van Reijmersdal 2016; Wood and Quinn 2003). Hence, the disclosure may not have led to resistance because participants did not mind the placement of this type of low-involvement product (cereal bar). Furthermore, the type of disclosure (i.e. only informing viewers about brand placement and source) could have led to a lack of resistance effects as it has been suggested that disclosures are more likely to trigger resistance when they also disclose the commercial intent of brand placement (e.g. Kuhn, Hume, and Love 2010; Van Reijmersdal 2016).

Thus, despite our expectation that the activation of PK would interrupt the viewing experience, which would in turn motivate viewers to resist the message (Cowley and Barron 2008), several factors may explain why such a negative response did not occur. Further research is needed to explain the circumstances (e.g. regarding brand familiarity, product type, salience of the brand placement) under which resistance effects and negative emotions (such as frustration or irritation) arise or do not arise, both in the short- and the long-term.

Moreover, our design enabled us to compare the disclosure effects within subjects between t1 and t2. We found that the effects of including the disclosure on conceptual PK and brand memory differed between the short- and long-term measurements, and provided strong evidence for testing effects (i.e. learning effect). Our questionnaire including questions about PK, and the brand in the first wave influenced participants' answers in the second wave. The findings show that not only the presence of a disclosure, but also questions regarding PK and the brand, can comprise external cues that increase conceptual PK and brand memory. This has important implications for researchers in the field, as it shows that our questionnaires may influence findings with regard to PK and brand memory. Future research into the long-term effects of disclosure should thus use a between-subjects design rather than a within-subjects design.

Finally, in this study we focussed on the persistence of the effects of one exposure to a brand placement disclosure. As people are probably confronted with disclosures more often, future research could investigate the long-term effects of repeated exposure to disclosures on persuasion knowledge and brand responses to specific brand placements and in general.

Limitations

Notwithstanding its contribution to the literature, our study has some important limitations. Because we only tested the long-term effects of one specific disclosure, for one placement, in one programme, we should be cautious in generalizing the results (Jackson and Jacobs 1983) – especially because we know that disclosure effects depend on disclosure, brand placement, and audience characteristics (Boerman and Van Reijmersdal 2016). The field would benefit from further research, possibly aiming to replicate short- and long-term disclosure effects, in different contexts, with placements of different products and brands, and with different disclosures.

Furthermore, erroneously, there was a small difference in the measurement of brand recognition in t1 versus t2. Our measurement in t1 did not include the '*None of the above*' option, whereas participants in t2 were able to indicate that they did not recognize any of the brands. This could have biased our comparison of brand recognition between the two measurement timings. Nevertheless, it could not have affected our comparison between the disclosure conditions within the timing measurements.

Practical implications

To date, it has been unclear whether disclosures influence people's responses over time. Our study suggests that a disclosure does not seem to harm advertisers in either

the short- or the long-term: viewers did not resist the placement or the brand. Advertisers may even benefit from disclosures, as they increase brand memory – even in the long-term. Additionally, our participants seemed to appreciate the disclosures (73% of our sample scored between five and seven on a seven-point scale measuring disclosure attitude). Based on our findings, we suggest that advertisers do not need to worry about the impact of adhering to disclosure regulations, and recommend transparency about brand placement in television programmes. For public policy makers, our study brings good news in that disclosures are found to help consumers recognize brand placements as advertising, even in the long-term.

Notes

1. We also measured the component ‘appropriateness of the sponsored content’ and ran all analyses for this construct. All results were the same as those for skepticism.
2. Erroneously, the measure of brand recognition did not include the ‘None of the above’ option in t1, which may have increased brand recognition in this wave. This is further addressed in the Discussion section.
3. Because the brand placement made a direct reference to the product being only suitable for women, we also ran all between-subjects analyses with gender as covariate. This did not change the results and gender had no effect on ad recognition, skepticism, and brand attitude. Women were significantly more likely to purchase the product ($M = 3.30$) than men ($M = 2.72$), $F(2, 202) = 3.26, p = .040$.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Sophie C. Boerman (PhD, University of Amsterdam, 2014) is Assistant Professor of Persuasive Communication at the Amsterdam School of Communication Research (ASCoR), University of Amsterdam. Her research mainly focuses on the effects of covert and personalized advertising, and how informing consumers about advertising (tactics) may empower people to make more informed decisions and influences the use of persuasion knowledge and persuasive outcomes.

Tina Tessitore obtained her Ph.D. in Applied Economic Sciences in 2013 from Ghent University in Belgium. Currently she is Assistant Professor of Marketing at IESEG School of Management in France. Her main fields of research are in marketing communications, public policy in marketing, and consumer behavior, and more specifically product placement, persuasion knowledge, suspicion and disclosures.

Céline M. Müller (MSc, University of Amsterdam, 2019) currently works as a Mechanical Master at the FinTech Company Adyen. She did a research master’s in Communication Science at the University of Amsterdam, where she worked on research projects concerning disclosures of influencer marketing and brand placement, and collaborated in the ERC-funded Europeanions research project.

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