

This item is the archived peer-reviewed author-version of:

Brand placement across media : the interaction of placement modality and frequency in film versus text

Reference:

Avramova Yana, Dens Nathalie, De Pelsmacker Patrick.- Brand placement across media : the interaction of placement modality and frequency in film versus text
Journal of business research - ISSN 0148-2963 - 128(2021), p. 20-30
Full text (Publisher's DOI): <https://doi.org/10.1016/J.JBUSRES.2021.01.025>
To cite this reference: <https://hdl.handle.net/10067/1753290151162165141>

Brand Placement across Media: The Interaction of Placement Modality and Frequency in Film versus Text

Yana R. Avramova ^a (corresponding author)

yana.avramova@uantwerpen.be

Tel: +32 3 265 44 88

Nathalie Dens ^a

nathalie.dens@uantwerpen.be

Tel: +32 3 265 49 66

Patrick De Pelsmacker ^{a, b}

patrick.depelsmacker@uantwerpen.be

Tel: +32 3 265 40 22

^a University of Antwerp
Faculty of Business and Economics, Marketing Department
Prinsstraat 13
2000 Antwerp
Belgium

^b Ghent University
Faculty of Economics and Business Administration, Department of Marketing, Innovation
and Organisation
Tweekerkenstraat 2
9000 Gent
Belgium

Funding: This work was supported by a postdoctoral fellowship grant by the Research Foundation
- Flanders (FWO) awarded to the first author [grant number 1206119N].

Cite as: Avramova, Y. R., Dens, N. & De Pelsmacker, P. (2021). Brand placement across media:
The interaction of placement modality and frequency in film versus text. *Journal of Business
Research*, 128, 20-30. <https://doi.org/10.1016/j.jbusres.2021.01.025>

Brand Placement across Media: The Interaction of Placement Modality and Frequency in Film versus Text

Abstract

The present research employed a 2x2x2 between-subjects design to investigate the effects of brand placement modality and frequency on brand attitude in two media, namely a short film or a written text featuring the placed brand. The narrative content and placement scenes were held constant. Modality was manipulated by placing the brand either visually or auditorily in the film, and either in the narration or in the dialogue of the text. Frequency was manipulated by inserting the brand either two or four times. Persuasion knowledge and irritation were measured as potential mediators. The findings show that, in film, greater irritation with auditory than visual placements ensues at low (but not high) placement frequency. In text, exposure to dialogue (vs. narration) placements leads to more irritation, regardless of frequency. As expected, irritation – but not persuasion knowledge – mediates the effects of modality and frequency on brand and film/story attitude in both media.

Keywords: brand placement modality; placement frequency; cross-media; persuasion knowledge; irritation; film and text

1. Introduction

Brand placement, the marketing technique of inserting brand identifiers in editorial content, has been gaining momentum across media and entertainment contexts, aiming to capture the elusive (i.e., ad-skipping, marketing-savvy, media multi-tasking) consumer (Davtyan and Cunningham, 2017; PQ Media, 2018; Russell, 2019). The last decade has also seen a surge of academic interest into the determinants of brand placement effectiveness. Most of these studies concern placements in film and TV (e.g., Dens et al., 2012; Homer, 2009; Lehu and Bressoud, 2008; Matthes et al., 2011), but recent work has started exploring placement effects in other media where brand placement is on the rise, such as music videos (e.g., Matthes and Naderer, 2016), video and computer games (e.g., Lorenzon and Russell, 2012), and written narratives (e.g., Avramova et al., 2017a, 2017b; Olsen and Lanseng, 2012).

Placement effectiveness has been linked to various factors, from placement execution (e.g., prominence, plot connection) to audience characteristics (e.g., involvement, brand familiarity; see Balasubramanian et al., 2006; Van Reijmersdal et al., 2009 for reviews). Placement prominence, i.e. the degree to which a placement is attention-grabbing and memorable (Gupta and Lord, 1998), has been widely studied, yet the evidence on the evaluative impact of prominence is mixed (e.g., Avramova et al., 2017b; D’Hooge et al., 2017; Fossen and Schweidel, 2019; Homer, 2009). One possible explanation for the inconsistent findings could be that prominence has been operationalized in different ways, most often in terms of placement modality or placement frequency. *Modality*, mainly studied in audiovisual media, refers to whether the placement is visual (product or logo is shown on screen), auditory (brand mentioned in the dialogue), or audiovisual (combining both elements; e.g., Fossen and Schweidel, 2019; Gupta and Lord, 1998). In the context of written narratives, a similar distinction can be made between placements in the

narration and in the dialogue of a story (an analogy with visual and auditory placements, respectively; Avramova et al., 2017b). *Frequency* (or repetition) refers to the number of times a brand appears within the content (e.g., Avramova et al., 2017a; Matthes et al., 2011).

The present research advances current theory in several ways. First, it disentangles the effects of these two key aspects of placement prominence. Since placing a brand in any type of content inevitably involves choosing both a certain modality and frequency level, this study investigates how these factors interact to influence placement responses. Furthermore, it directly tests the mechanism underlying the (interactive) effects of modality and frequency on brand evaluation. Specifically, it explores whether modality and frequency affect *persuasion knowledge activation*, whereby consumers recognize that brand references serve commercial motives (Campbell and Kirmani, 2000; Friestad and Wright, 1994) and/or *irritation* with the placement, and whether these responses mediate the effects of modality and frequency on brand attitude.

Critically, we test the impact of placement modality and frequency in two different media. Scholars have called for research that compares brand placement effects across two or more media within the same study (e.g., Russell, 2019; Sung and De Gregorio, 2008). Such an approach is essential, given that past work has explored placement effects in different media using different narrative content, products, and placement execution strategies. This makes comparison of placement effects across media difficult, especially since audiovisual and print media may induce different processing styles and thus elicit different responses to the content (e.g., Green et al., 2008; Tukachinsky, 2014) and the placements (e.g., Campbell et al., 2013). This has broad practical implications for both advertisers (who should choose a particular medium and placement execution strategy) and policy-makers (who need to design effective regulations, e.g. placement disclosures). By manipulating medium, yet keeping other key factors

constant, the present research systematically explores the effects of placement modality and frequency, and their underlying processes, in both film and text.

Finally, we also investigate if placements influence evaluation of the content itself (*film/story*), which has not received much (and, in the case of fiction, any) attention (Cowley and Barron, 2008; Russell, 2019). If exposure to certain placement executions has a negative impact on film/story attitudes, consumers' overall engagement with the content may decline, thereby precluding further consumption of the content and exposure to placements.

2. Literature Review and Hypotheses Development

2.1. Brand Placement Effects Across Different Media: A Comparison Between Film and Written Text

A number of researchers have called for a systematic investigation of the role of the medium in brand placement effectiveness (Balasubramanian et al., 2016; Russell, 2019; Sung and De Gregorio, 2008; Van Reijmersdal et al., 2009). To our knowledge, the present study is the first to respond to these appeals by comparing (virtually) identical placements embedded in a short film and a short piece of fiction (short-story). We employ an audiovisual and a print format because these share important similarities (making them comparable), but also a number of differences (allowing for a more informative and conservative test of our model). First, unlike other media featuring brand placement (e.g., music and games), film and fiction both present *narrative* content. Thus, they share a similar plot structure, both require processes such as event segmentation and inference generation, which produce mental models during comprehension (Jajdelska et al., 2019; Magliano et al., 2013). Further, both film and fiction can transport into a narrative world by evoking identification with protagonists and intense emotional responses (Busselle and Bilandzic, 2009; Green et al., 2008; Mar et al., 2011). This is crucial, as narrative

transportation is arguably the principal mechanism underlying narrative persuasion (e.g., Escalas, 2004; Green and Brock, 2000; Van Laer et al., 2014).

Still, film and fiction are different enough to present a compelling comparison for our purposes. Watching a film involves (partly) different sensory channels and requires different types of processing compared to reading a story (e.g., a film is representational in that it presents images and sounds, while a text is symbolic as it relies on decoding language). The two media may also call for different levels of effort and participation (i.e., watching a film may be less cognitively taxing than reading a book) and allow more or less control over the pace of the narrative (we can read more slowly, or go back to reread a passage, while we have less control when watching a film; see Green et al., 2008; Mar et al., 2011). Readers may also have less vivid and less accurate memory of a text (than viewers of a film), as they are more likely to draw on their own experience and add new elements to the story (Jajdelska et al., 2019). It is hence conceivable that placements within film and text are also processed differently.

Notably, the comparison between film and fiction seems highly relevant for practice: The most popular movies are more and more often book adaptations (StephenFollows, 2014). Literary fiction is the most common script source of US top-grossing movies, with 33% of thrillers, 36% of drama, and 42% of black comedy top 100 films between 1994-2013 being based on a novel or short-story (StephenFollows, 2014, 2015). Given that many novels feature real brand names in the original texts (e.g., *Fifty Shades of Grey*, the James Bond novels, the *Millennium Trilogy*), movie producers inevitably face the question of whether and how to portray these brands on the big screen most effectively, especially if these are paid integrations.

Next, we review past work on the impact of placement modality and frequency on brand evaluation in film and written text. We then propose and test a moderated mediation model (see Figure 1) and we next discuss its components in more detail.

PLACE FIGURE 1 ABOUT HERE

2.2. Placement Modality and Frequency in Film

Most past work on placement modality in film and TV programs has compared visual to audiovisual placements, consistently showing that the latter lead to higher brand recall (e.g., Brennan and Babin, 2004; Dens et al., 2012) and, at least in some cases, to lower brand evaluation (Cowley and Barron, 2008; Dens et al., 2012; Homer, 2009). However, besides excluding purely auditory placements, these studies confounded modality and frequency: The audiovisual placements were also presented a higher number of times, as the goal was to manipulate placement prominence, rather than modality per se, making it hard to assess the unique role of each variable.

To our knowledge, only two prior experimental studies employed purely auditory placements. They found that auditory (vs. visual) placements enhance brand recall, suggesting that they are more extensively processed (Law and Braun, 2000; Russell, 2002). Russell (2002) argues that auditory placements attract more attention and undergo greater elaboration as they are part of the script (dialogue), and are thus (expected to be) more meaningful than visual placements (e.g., props; Russell, 2002). In line with this, a recent analysis of the relationship between brand placement activities in TV programs and viewers' online behaviors (Fossen and Schweidel, 2019) found that auditory placements in TV programs are more strongly associated with increases in eWOM and web traffic than less prominent visual placements (Fossen and Schweidel 2019).

However, the content or valence of viewers' responses were not studied. This is crucial, as the experimental studies mentioned above demonstrate that exposure to auditory (vs. visual) placements is associated with lower brand choice (Law and Braun, 2000) and lower brand attitude (Russell, 2002). Notably, in Russell's (2002) study, this pattern only emerged when auditory placements were weakly connected to the plot (and it reversed for strongly plot-connected placements), suggesting that modality itself may not reliably predict placement effectiveness.

The present research extends prior work and proposes that the impact of modality may also depend on placement frequency. Suggestive support for our proposal comes from one study where modality and frequency were independently manipulated within the same experiment. Homer (2009) tested how exposure to a single vs. repeated (3 times) audiovisual or visual placements affects brand attitude and found an interaction effect: Brand attitude decreased in the repeated, relative to the single, placement conditions, but only for audiovisual (and not for visual) placements. Notably, that study only compared audiovisual to purely-visual placements, hence the impact of purely-auditory placements at different levels of frequency still needs to be assessed. In addition, it did not report whether the impact of modality was significant at higher levels of frequency.

Hence, the present study explores the effects of purely-auditory vs. purely-visual placements at different levels of frequency (i.e., 2 and 4 placements). Past research shows that vivid, compared to pallid, information typically evokes more cognitive elaboration (e.g., Kisieliuss and Sternthal, 1986). In line with this idea, Matthes et al. (2011) showed that brand recognition and recall of visual placements in a TV program increase, while brand attitude decreases, as placement frequencies increase. Whether the same pattern emerges when comparing different modalities,

however, has not yet been investigated. Based on prior work, we expect that auditory (vs. visual) placements are more prominent to start with (Fossen and Schweidel 2019; Law and Braun, 2000; Russell, 2002), and more frequent exposure provides more opportunities for placement elaboration (Avramova et al., 2017a; Campbell and Keller, 2003; Homer, 2009). Consequently, the impact of auditory (vs. visual) placements on placement responses and hence on brand evaluation should be stronger as repetition increases. We elaborate on the nature of this effect later on.

2.3. Placement Modality and Frequency in Text

The present research further examines whether the impact of placement modality and frequency described above with regard to film, replicates in the context of written text. The concept of placement modality in fiction was recently introduced by Avramova et al. (2017b), who drew an analogy between spoken (in film) and written dialogue (in text), and between visual depiction (in film) and verbal narration (in text). For instance, Fay Weldon's notorious novel *The Bulgari Connection*, which was commissioned by the jewelry designer, featured the brand name both in the dialogue (1) and the narration (2):

- (1) "We'll go to Bulgari tomorrow and buy the necklace," he said.
- (2) The Bulgari necklace, important and unalterable, sat serenely round the smooth neck, amidst paint mayhem.

Based on research showing that dialogue (i.e., direct speech) is perceived as more vivid and memorable and undergoes deeper processing than other types of text (e.g., indirect speech; Eerland et al., 2013; Yao et al., 2011), Avramova et al. (2017b) proposed that brands placed in the dialogue (vs. narration) are more prominent and thus undergo more extensive elaboration. In line with this reasoning, they found that dialogue placements decrease brand evaluation for readers who score relatively high on need for cognition (NFC; Cacioppo and Petty, 1982). The

authors suggested that high-NFC individuals, who typically engage in more effortful and careful processing, processed the dialogue placements in a more systematic manner, resulting in more negative brand attitudes. Critically, however, Avramova et al.'s (2017b) study integrated four placements within the text. It could thus be that the negative effect of modality emerged due to the *high number* of dialogue placements, rather than in response to dialogue placements *per se*. If placement repetition indeed leads readers to process dialogue placements more extensively, their negative impact on brand attitude may not ensue at lower frequencies. The present experiment directly tests this idea.

2.4. Persuasion Knowledge and Irritation as Potential Mediators

So far, we proposed that – in both film and text – the impact of placement modality (auditory/ dialogue vs. visual/narration) on brand evaluation gets stronger as placement frequency increases. A crucial question, however, is what drives modality effects. We examine consumers' responses to the placements, namely persuasion knowledge and irritation, as potential mediators of the effect of modality on brand and content-related outcomes (see Figure 1).

Persuasion knowledge (PK) is the “usual suspect” in brand placement research and it has been assumed to drive the negative impact of modality on brand attitude (e.g., Cowley and Barron, 2008; Dens et al., 2012; Russell, 2002). And yet, although research on sponsorship disclosures in TV programs and blogs (Boerman and Van Reijmersdal 2016) demonstrates that consumers need to recognize placements as advertising and understand their persuasive intent (i.e., conceptual PK activation) to eventually engage in critical processing of the brand, the link between placement modality and PK activation has never been formally tested. Moreover, evidence for the effects of placement frequency on PK activation is mixed, thereby supporting conflicting expectations: Studies using music videos (Matthes and Naderer, 2016) and text (Avramova et al., 2018) show

that higher placement repetition increases PK, whereas a study using a TV program found no effects (Matthes et al., 2007). Hence, we formulate the following research questions:

RQ1a: Does placement modality in film influence PK and is this effect moderated by frequency?

RQ1b: Does placement modality in written text influence PK and is this effect moderated by frequency?

Further, both theoretical and empirical support for the idea that PK leads to more negative brand outcomes are equivocal. Theoretically, PK refers to consumers' *knowledge* about the strategies and tactics used in persuasion attempts (Campbell and Kirmani, 2000; Friestad and Wright, 1994), rather than a (positive or negative) evaluation of these strategies. Conceptualizing PK as a valence-free cognitive response, we argue that it need not breed criticism of the placement or the brand (see also Boerman et al., 2012, 2014; Wojdyski & Evans, 2020). In fact, recent work on the impact of placement frequency in text shows that neither conceptual PK, nor critical processing of the placements (another cognitive measure) influence brand attitude (Avramova et al., 2018; Storm and Stoller, 2015). Research on the impact of placement disclosures in TV programs (Boerman et al., 2012, 2014) and music videos (Matthes and Naderer, 2016) similarly shows that conceptual PK does not (directly) influence brand attitude. In fact, PK activation may even improve brand evaluation (Campbell et al., 2013; Wei et al., 2008), arguably due to higher perceived tactic credibility and transparency (Isaac and Grayson, 2017; Lorenzon and Russell, 2012; Wojdyski & Evans, 2020).

In sum, although high placement prominence has often been associated with lower brand evaluation, the extant literature casts doubt over the causal role of PK. Hence, we expect that – regardless of whether modality (and frequency) affect PK (RQ1a,b) – PK will not mediate its impact on brand attitude. Rather, *irritation with the placement* will drive these effects. Research

in advertising has shown that irritation is a basic affective reaction to ads, which involves feelings of annoyance, displeasure, and impatience (e.g., Aaker and Bruzzone, 1985; De Pelsmacker and Van den Bergh, 1999) and typically leads to more negative brand attitude (e.g., Aaker and Stayman, 1990; Edell and Burke, 1987). Although never measured as a mediator in past brand placement research, some studies suggest irritation may play an important role. Homer (2009) found that repeated (vs. single) audiovisual (but not visual) placements enhance perceptions of distraction and plot interference, and decrease realism. Further, whereas PK was unrelated to brand evaluation when measured as a cognitive construct (Matthes and Naderer, 2016), it was negatively related to brand attitude (as a moderator of repetition effects, Matthes et al., 2007) when measured using both cognitive and affective items (i.e., annoying, disturbing).

Drawing on this evidence, we propose that auditory/dialogue (vs. visual/narration) placements are processed more extensively and trigger stronger irritation, especially at higher placement frequencies. Irritation (and not PK) then negatively influences brand evaluation. Thus, we test a moderated mediation model: In both media, we expect that irritation will mediate the effect of modality on brand attitude, and this indirect effect will be moderated by frequency (see Figure 1).

H1a: Auditory, as compared to visual, placements in film elicit more irritation, and this effect is stronger at higher (vs. lower) levels of placement frequency.

H1b: Dialogue, as compared to narration, placements in text elicit more irritation, and this effect is stronger at higher (vs. lower) levels of placement frequency.

H2a: Irritation mediates the effect of modality on brand attitude, such that stronger irritation in response to auditory (vs. visual) film placements at higher (vs. lower) frequency leads to lower brand attitude.

H2b: Irritation mediates the effect of modality on brand attitude, such that stronger irritation in response to dialogue (vs. narration) text placements at higher (vs. lower) frequency leads to lower brand attitude.

Critically, the present study goes beyond brand-related outcomes and also investigates the consequences of placement characteristics for consumers' *film* and *story attitudes*. In her study, Homer (2009) measured attitudes towards the program and found the same pattern as for brand attitudes (i.e., program attitudes deteriorated after exposure to repeated audiovisual, but not visual, placements). The current experiment tests whether the same effects emerge for auditory placements in film, as well as for dialogue placements in text, and if responses to the narrative content are also driven by irritation:

H3a: Irritation mediates the effect of modality on film attitude, such that stronger irritation in response to auditory (vs. visual) film placements at higher (vs. lower) frequency leads to more negative film attitude.

H3b: Irritation mediates the effect of modality on story attitude, such that stronger irritation in response to dialogue (vs. narration) text placements at higher (vs. lower) frequency leads to more negative story attitude.

Notably, although we do not formulate directional hypotheses regarding the impact of medium type and we expect modality effects to replicate across the two media, we directly test whether the same pattern emerges across film and text. Thus, we test the three-way interaction of modality, frequency, and medium on irritation, and thus, on brand and film/story attitude (i.e., the moderated mediation hypothesized above; see Figure 1) to address the following research question:

RQ2a: Does medium moderate the relationship between modality, frequency and irritation (moderated mediation) on brand attitude?

RQ2b: Does medium moderate the relationship between modality, frequency and irritation (moderated mediation) on film/story attitude?

3. Method

3.1. Study Design and Experimental Manipulations

We conducted an experiment with a 2 (Medium: Film, Text) x 2 (Modality: visual/narration, auditory/dialogue) x 2 (Frequency: 2, 4) full-factorial between-subjects design. Participants were randomly assigned to one of the 8 experimental conditions¹. Participants in the text conditions read a short-story (~2,900 words), while those assigned to the film conditions watched a film version of the same narrative (~9 minutes long). A similar procedure was used by Green et al. (2008), who investigated differences in narrative transportation across media by comparing responses to a novel and a movie (e.g., *Harry Potter and the Chamber of Secrets*) and by Isberner et al. (2019) who explored how transportation and identification with protagonists in films (excerpts from Disney movies) and written text (excerpts from the corresponding books) influenced respondents' self-perceptions.

The short-story was written by a professional writer and the film was shot by a semi-professional film crew for the purposes of the present research using Russell's (2002) "theater methodology" (see also Gillespie et al., 2018). All materials were in Dutch and the content was as similar as possible across the two media. That is, the dialogue was almost identical, and the narration of the

¹ Data from two of the conditions (where participants were exposed to 4 placements in either the narration or the dialogue of a text) were also reported in another study.

story (3rd person, present tense) described the scenes and the characters' actions in the same way as they were depicted in the film version.

In the film/story, several young people chat in a cafe. At some point, a friend of theirs, Olivier, joins them and mentions he went shopping earlier – the link to the integration of clothing brand Esprit®. *Placement modality* was manipulated by inserting the brand either visually or auditorily in the film, and in either the narration or the dialogue of the short-story (Avramova et al., 2017b). In the auditory (film) and dialogue (text) conditions, the brand is mentioned in the conversation between the characters. In the visual placement (film) conditions, the brand name (i.e., the word ESPRIT) is seen printed on a shopping bag (i.e., Olivier is shown to take out the Esprit bag from his backpack). There were no other (pictorial) brand identifiers, such as logos or symbols. In the narration (text) conditions, the brand is mentioned by the narrator who describes the actions of the character associated with the brand (e.g., “Olivier took out the Esprit bag from his backpack”; the full text of the story in Dutch, as well as an English translation of the placement scenes, are available from the authors upon request). Thus, in both the visual (film) and narration (text) conditions, participants were exposed to a text-based brand identifier (the word Esprit), and encoded that in the visual modality (seen on screen or on the page). In this way, the short-story and film were kept as similar as possible to ensure maximum comparability across modality conditions in the two media.

Finally, *placement frequency* was manipulated by inserting the brand (in either of the two modalities) either 2 or 4 times, henceforth “low” and “high” repetition, respectively. In the 2-repetition conditions, we used the first and the last placements (in both media and modalities) to make sure that the results were not due to primacy or recency effects.

3.2. Participants and Procedure

Three hundred and fifty-seven respondents took part in the study. Participants were recruited through a professional online panel agency and a random sample of Flemish men and women aged 18-30 were emailed with an invitation to fill in an online survey (programmed in Qualtrics®). This age group was deemed most suitable given the content of the narrative. Upon clicking the survey link, participants were automatically and randomly assigned to one of the experimental conditions. The research was briefly introduced as “a series of separate, unrelated studies, including a study on perceptions of a film [short-story], a consumer behavior study, and a personality questionnaire [not relevant to the present study]”. The first “study” (the story containing the manipulations and story-related measures, including story attitude, absorption, and character liking) and the second “study” (containing the brand attitude and brand familiarity measures) each featured a different title, introduction, instructions, and layout to prevent respondents from (immediately) seeing the link between the manipulations and the dependent measures.

In addition to creating conceptually and operationally equivalent manipulations, and separating the manipulations and measures within the experiment, several other features of our questionnaire design and experimental procedure served to further minimize various sources of potential bias. First, we measured brand attitudes and brand familiarity for several filler brands to avoid drawing attention to the target brand. Second, the potential mediators, persuasion knowledge and irritation, were measured after the dependent measures (brand and film/story attitude) in order to avoid having participants generate inferences about their brand attitude based on these measures (we would argue that the opposite scenario, where participants infer their level of persuasion knowledge and irritation from their self-reported brand attitude is much less likely, hence the order we administered). Finally, we also minimize the influence of confounding variables by

statistically controlling in our analysis for the influence of brand familiarity, attitude towards the character, absorption in the story/film, plot connection, and perceived effort (see *Measures* below).

We also took several steps to ensure the quality of our data. First, participants could only proceed to the next page of the short-story (film) after a preset time interval (i.e., between 60-120 seconds/page, based on reading times of 4 students in a pretest; after 9 minutes, i.e., the length of the film). In addition, we asked participants if they read (watched) the entire text (film), and those who answered “no” were automatically excluded. We also embedded an attention check asking participants to enter a particular number on the respective scale, and non-complying respondents were automatically redirected to the end of the survey. Finally, two multiple-choice questions checked if participants had a basic understanding of the story/film plot. Only participants who answered both questions correctly were retained (resulting in the elimination of 20 participants). The final sample thus only included respondents who satisfied all these criteria ($n = 337$; 36-51 participants per condition; $M_{\text{age}} = 23.99$, $SD_{\text{age}} = 3.33$; 61.1% female). The median reading time for the story across all text conditions was 11.25 minutes ($M = 13.85$ minutes; computed after removing one outlier – a participant who spent 112 minutes on the first page of the text).

3.3. Measures

Table 1 reports all scale items and descriptive statistics for all measures. *Brand attitude* (e.g., positive/negative; Dens et al., 2012) and *film/story attitude* (e.g., unfavorable/favorable; Homer, 2009) were measured using 7-point bipolar semantic differential scales (i.e., seven circles representing the seven points of the rating scale, with the scale anchors positioned at the two ends, e.g. unfavorable ○ ○ ○ ○ ○ ○ ○ favorable). *Persuasion knowledge* (e.g., The reference to Esprit in the film/story is a form of advertising; e.g., Boerman et al., 2012) and *irritation* (I found

the manner in which Esprit was integrated in the film/story irritating) were measured on 7-point Likert scales (fully disagree/fully agree). Persuasion knowledge and irritation were moderately correlated ($r = .46$).

PLACE TABLE 1 ABOUT HERE

In addition, we measured several variables as covariates in order to statistically control for their potential influence. First, we measured *absorption* in the story/film, since absorption, or narrative transportation, may vary across media (Green et al., 2008) and readers' level of transportation moderates the effects of brand name repetition on brand attitude (Avramova et al., 2017a). We employed Kuijpers et al.'s (2014) 18-item Story World Absorption Scale (SWAS), which can be used to assess absorption in both text and film.

We also measured *attitude towards the character* placing the brand using bipolar semantic differential scales (e.g., not at all attractive/ very attractive), as past work shows it may influence perceptions of the placed brand (e.g., Russell and Stern, 2006). Moreover, a communicator may be more salient in audiovisual than in print persuasion contexts, making communicator-related cognitions more influential (e.g., Chaiken and Eagly, 1983; Sparks et al., 1998). To avoid raising suspicion, we told participants that to keep the questionnaire shorter, we randomly assign respondents to rate one of four characters. In fact, all participants were asked to rate Olivier.

Plot connection (e.g., There was a clear link between Esprit and the film/story; Russell, 2002) was measured to control for any differences across the two media. Further, we measured *brand familiarity*, as it may moderate the effects of placement repetition on brand attitude (Avramova et al., 2017a; Storm and Stoller 2015). Brand attitude and brand familiarity were also measured for two filler brands (Zara® and We®) to further mask the connection between the text/film and the

dependent measures. Finally, we measured perceived *effort* using three bipolar semantic differential scales (e.g., The film/story was difficult/easy to understand; Green et al., 2008), since reading a text may be more effortful than watching a film, which sometimes correlates with media preferences and narrative transportation (see Green et al., 2008).

4. Results

To test our research questions and hypotheses, we used Hayes' (2013) PROCESS macro for SPSS, which uses a multiple regression approach and allows testing moderated mediation by estimating conditional indirect effects based on bias-corrected bootstrap confidence intervals (BCBCI). Although we do not formulate hypotheses regarding the effect of medium, since the literature gives no indication if and how it will influence placement effects, we used it as an additional predictor to test whether it moderates the relationship between modality, frequency, and the proposed mediators, as well as whether the conditional indirect effect of modality on brand and content outcomes replicates across media. All three independent variables were dichotomous: Modality was coded 0 for the narration/visual and 1 for the dialogue/auditory placement; frequency was coded 0 for the two-placement and 1 for the four-placement condition; medium was coded 0 for text and 1 for film. We used Model 11 in PROCESS, where PK and irritation were entered as parallel mediators. Separate analyses were conducted for each dependent variable (brand attitude, film/story attitude).

4.1. Persuasion Knowledge and Irritation

We first report the simple and conditional effects of modality on PK and irritation within each level of frequency and within each medium. There were no significant effects on PK. The only effects which approached significance were of two covariates (i.e., absorption, $b = -.15$, $t = -1.93$, $p = .054$; and plot connection, $b = -.12$, $t = -1.82$, $p = .07$; all other p 's $> .11$). Thus, addressing

RQ1a and RQ1b, placement modality and frequency did not influence the degree to which participants perceived placements as a form of advertising in either medium. For irritation, absorption into the film/story was a significant covariate, indicating that the more absorbed readers/viewers were, the less irritated they were with the placements ($b = -.35, t = -3.78, p < .001$). The effect of perceived effort was marginally significant ($b = -.17, t = -1.96, p = .051$). The three-way interaction between modality, frequency, and medium was significant ($b = -1.53, t = -2.31, p = .022$; all other p 's $> .21$; see Table 2). We then tested the two-way interaction between modality and frequency and the conditional effects of modality within each level of frequency within each medium.

PLACE TABLE 2 ABOUT HERE

In the *film* conditions, the interaction effect between modality and frequency on irritation was significant ($b = -1.21, t = 6.61, p = .011$). However, contrary to our predictions, the effect of modality was significant in the 2-repetition conditions ($b = .99, t = 3.02, p = .003$), but not in the 4-repetition conditions ($p = .52$; see Table 3), thereby rejecting H1a. Thus, although viewers exposed to the auditory (vs. visual) placements reported greater irritation, as expected, the effect was eliminated, rather than amplified, at higher (vs. lower) repetition levels (see Figure 2).

PLACE TABLE 3 & FIGURE 2 ABOUT HERE

In the *text* conditions, the two-way interaction between modality and frequency on irritation was not significant ($t = .47, p = .494$), thereby rejecting H1b. Although this indicates that the effect of modality does not significantly differ *across* frequency conditions, the conditional effects (see Table 3) and the pattern of the means (see Figure 2) show that the effect of modality on irritation was significant in the 4-repetition condition ($b = .73, t = 2.431, p = .021$), with exposure to dialogue (vs. narration) placements leading to higher irritation, while it was not significant in the

2-repetition condition ($p = .255$). Thus, while the interaction effect did not reach significance, the expected pattern emerged for the impact of modality at low and high frequency.

4.2. Brand Attitude

We next tested if PK and irritation predict brand attitude and if they mediate the effect of modality within each level of frequency within each medium (moderated mediation). Higher brand familiarity ($b = .44, t = 15.83, p < .001$) and greater perceived processing ease (i.e., less effort, $b = .12, t = 2.69, p = .008$) were associated with more favorable brand attitude (all other covariates, p 's $> .26$). Modality did not directly affect brand attitude ($b = -.03, t = -.34, p = .735$). Turning to the potential mediators, PK had a positive impact on brand attitude ($b = .08, t = 2.08, p = .038$), but the analysis of the conditional indirect effects confirmed that PK did not mediate the effects of modality and frequency in either medium (all confidence intervals included 0; see Table 4).

In contrast, and as predicted, irritation exerted a negative impact on brand attitude ($b = -.11, t = -3.22, p = .001$). The index of moderated moderated mediation (IMMM; as there are two moderators; Hayes, 2017) was significant (95% BCBCI = .01, .39), indicating that the moderation of the indirect effect further depends on medium. We thus looked at the conditional indirect effects, namely at the impact of modality on brand attitude via irritation within each level of frequency and within each medium (see Table 5). In the *film* conditions, irritation mediated the negative effect of exposure to visual (vs. auditory) placements on brand attitude at low, but not at high placement frequency, thereby rejecting H2a. In the *text* conditions, irritation mediated the negative effect of dialogue vs. narration placements on brand attitude at high, but not at low placement frequency, providing support for H2b.

Finally, addressing RQ2a, the IMMM showed that medium moderated the indirect effect of modality through irritation at high (95% BCBCI = .02, .30), but not low, levels of frequency (95% BCBCI = -.15, .07). Thus, the effects of modality on brand attitude in the two media differed significantly only when frequency was relatively high, such that readers who were exposed to four dialogue placements in the text reported more irritation, and thus lower brand attitude, than viewers exposed to four auditory (i.e., also dialogue) placements in the film.

PLACE TABLE 4 & 5 ABOUT HERE

4.3. Film/story attitude

We conducted the same analysis with film/story attitude as the dependent variable to test H3a and H3b. In this model, absorption in the story was a significant covariate ($b = .77, t = 15.20, p < .001$; all other covariates, p 's $> .29$). Modality did not exert a direct effect on film/story attitude ($b = .15, t = 1.52, p = .130$). Further, PK did not influence film/story perceptions ($t = .39, p = .694$) and did not mediate the effects of modality and repetition on film/story attitude in either medium (see Table 6). Consistent with our predictions, irritation had a significant negative effect on film/story attitude ($b = -.16, t = -4.59, p < .001$) and the IMMM was significant (95% BCBCI = .03, .54). The conditional indirect effects followed the same pattern as those for brand attitude. In the *film* conditions, irritation mediated the negative effect of exposure to visual (vs. auditory) placements on film attitude at low, but not at high placement frequency (see Table 7), thereby rejecting H3a. In the *text* conditions, irritation mediated the negative effect of dialogue (vs. narration) placements on story attitude at high, but not at low placement frequency, providing support for H3b. Addressing RQ3a, and similar to the results for brand attitude, the IMMM showed that medium moderated the indirect effect of modality through irritation at high (95% BCBCI = .04, .40), but not low levels of frequency (95% BCBCI = -.23, .09).

PLACE TABLE 6 & 7 ABOUT HERE

5. Discussion

The current research tested the impact of placement modality and frequency on placement responses, namely persuasion knowledge and irritation, and their downstream effects on brand and film/story attitude in two different media. In the film conditions, the pattern was not entirely consistent with our predictions: Greater irritation in response to auditory than to visual placements emerged at lower levels of repetition, but this difference was eliminated (rather than amplified) at higher levels of repetition. In the text conditions, exposure to dialogue (vs. narration) placements led to greater irritation, as predicted, but the magnitude of this effect did not differ significantly across repetition levels. Still, irritation mediated the effects of modality and frequency on brand and film/story attitude in both media, as expected. Furthermore, modality and frequency did not affect PK activation, and PK did not mediate any of the above relationships. In fact, the only significant effect of PK was its positive impact on brand attitude.

The present study contributes to the extant literature in several important ways. First, although previous work has studied placement modality and frequency in written narrative separately (Avramova et al., 2017a, 2017b; Storm and Stoller, 2015), the current experiment is the first to systematically manipulate both factors within the same study. Moreover, it is the first attempt to compare brand placement effects across different media. By using the same narrative content, target brand, and dependent measures, we could assess whether two key placement characteristics exert the same effects in film and text. Finally, we provide initial evidence for the underlying process by demonstrating that irritation with the placement (and not PK), mediates the effects of modality and frequency on both brand attitude and film/story attitude.

Although the interaction effect of modality and frequency on irritation in the text conditions was not significant, the conditional effects are in line with our predictions that the effect of modality increases with frequency. Moreover, the indirect effect of modality and frequency on brand attitude via irritation was significant in the high, but not in the low, frequency conditions. This pattern is consistent with Homer's (2009) finding that exposure to repeated (3 times) audiovisual, but not visual, placements was perceived as more distracting and was more detrimental to brand attitude than exposure to a single placement.

Notably, our results for film showed that repeating the placement even once (i.e., 2 exposures) was sufficient to elicit greater irritation in the auditory relative to the visual placement conditions. However, this effect was not amplified at higher placement frequency (i.e., 4 exposures). There are several possible explanations for this finding. First, it is possible that purely-auditory placements (as used in the present research) are less prominent than audiovisual placements (as used in Homer's work) (see also Law and Braun, 2001). Hence exposure to 4 purely-auditory placements did not significantly increase irritation beyond the levels induced at 2 placement repetitions in our experiment, while exposure to 3 (vs. 1) audiovisual placements had a greater impact in Homer's studies. Further, our visual placements may have been relatively more prominent (e.g., bigger size or more central position), which could have made repeated exposure extra irritating. Interestingly, some past research found better recall of visually-presented than auditorily-presented information (e.g., Furnham et al., 1987; Gunter et al., 1986), suggesting that visual cues may (sometimes) be more salient than auditory cues.

One key contribution of our study is that it directly compared placement effects across two different media. A number of scholars have called for such an investigation in the past (e.g., Bhatnagar et al., 2004; Brennan and McCalman, 2011; Friedman, 1985; Sung and De Gregorio

2008; Van Reijmersdal et al., 2009), arguing that audiovisual and print media may differ in important ways. For instance, reading (and generating story-related imagery) likely requires more concentration and mental effort than the more “automatic” viewing of film, but it also allows self-pacing (see also Green et al., 2008; Magliano et al., 2013; Tukachinsky, 2014). This implies that, if reading a story imposes a higher cognitive load than watching a film, fewer resources may be available to readers (as compared to film viewers) for extensive elaboration and critical processing of the placements. This would be a reason to expect equivalent placements (in terms of modality and frequency) to elicit lower irritation in a text, than in a film, context.

And yet, although our findings within each medium (analyzed separately) seem to support this view (i.e., a significant modality effect emerged at 2 repetitions in film, but only at 4 repetitions in text, with regard to both irritation and brand attitude), the two media only seem to differ when comparing readers’ and viewers’ irritation in response to the dialogue placements. Apparently, repeated exposure to the brand name within dialogue on the page is more irritating than repeatedly hearing the brand name within the same dialogue in a film. One tentative interpretation of this finding is that dialogue may be less attention-grabbing in film than in text, as salient visual information is competing for viewers’ attentional resources in film, while dialogue is encoded apart from the preceding or following narration scenes in text. As a consequence, a brand name may undergo deeper processing when placed in the dialogue of a text, than in a film, thereby eliciting more irritation. This effect, even if hard to predict or explain using extant theories, is aptly captured by a New York Times journalist, who described his experience with Fay Weldon’s novel *The Bulgari Connection* (see Arnold, 2001):

I counted 34 mentions of Bulgari and about 15 other rhapsodies of jewelry [...]. Mostly they stick out on the page like a boulder in the sand. [...] They thump off the page, and land heavily, Here I am. In that sense it's not at all like product placement in the movies, where the product placed most often seems subliminal on

the screen, seen and gone, quick, quick. The printed words on the page, certainly those that are in essence underlined, are there solid, clunky, unmovable, like carbuncles.

Regardless of the specific factors that elicit irritation in each medium, this affective reaction is detrimental to brand and story evaluation in both media. This is noteworthy for several reasons. First, it is not obvious that irritation with the placement should influence attitudes towards the brand. That is, viewers/readers could have attributed responsibility for the irritating placement to the content producers, rather than to the brand. On the other hand, if irritation with the placement reflects a general negative reaction to the marketing tactic employed by the advertiser, it may seem surprising that story attitudes are also affected. The present study shows that evaluation of both the brand and the content suffer when irritation with the placement is high. What is more, although the levels of irritation reported in this experiment were relatively low, even a small increase in irritation was sufficient to negatively influence brand and content attitude.

Further, our results show that consumers' affective, rather than cognitive, reactions to the placements drive their impact on brand and story evaluation: Irritation mediated the effects of modality and frequency on brand (and story/film) attitude, while PK did not. This finding is in line with a growing body of work showing that recognition of the commercial nature of brand placements is not necessarily detrimental to brand outcomes (e.g., Boerman et al., 2012; Gillespie et al., 2018; Matthes and Naderer, 2016; Storm and Stoller, 2015). The present study adds to this literature by showing that placement modality and frequency may not influence the degree of PK activation. Critically, PK did not affect film/story attitude, and it was even positively related to brand attitude. The latter finding is consistent with a number of previous studies showing that accessing PK can actually enhance brand evaluation due to higher perceived tactic credibility (Isaac and Grayson, 2017; Lorenzon and Russell, 2012; Wojdyski and Evans, 2020). For

instance, Lorenzon and Russell (2012) show that consumers have both positive and negative feelings towards in-game advertising when all three (agent, topic, persuasion) knowledge types are activated. Our findings that PK had a positive effect on brand attitude, while irritation had a negative impact, follow a similar pattern.

6. Implications, Limitations, and Future Research

The current findings are informative for practitioners in demonstrating that placement execution factors like modality and repetition could determine consumers' perceptions of the integration, which then affect brand attitude, as well as film/story attitude. In film, the negative impact of auditory placements levels off at higher frequencies, while visual placements seem to gain prominence and thus increase irritation. In contrast, placements in the narration of a fictional text seem to be more persuasive than placements in the dialogue, and higher placement frequency may increase irritation (although the optimal number of placements obviously depends on overall text length). Thus, the "lessons" learned from research employing one medium may not always be directly applicable in the context of another, and the interplay of different placement characteristics, and the medium itself, should be considered before a specific execution is chosen. Whereas visual placements are typically considered to be less prominent than auditory and audiovisual placements, and thus less susceptible to the negative impact of placement repetition (Homer, 2009), the present experiment found the opposite pattern. This raises the question of whether placement modality should be considered a proxy for placement prominence in the first place. Obviously, both visual and auditory placements can be more or less prominent: Visual placements may vary in terms of size, position on the screen, and duration, while auditory placements may differ by virtue of the speaker's pitch, intonation, and stress. However, while some work exists on the effects of visual placements varying in prominence (Dens et al., 2012;

Fossen and Schweidel, 2019; Matthes et al., 2012), the impact of different levels or types of auditory prominence is yet to be explored.

While we studied the effects of exposure to 2 or 4 brand mentions, future research may test if higher repetition levels affect placement responses and brand evaluation. Past work utilizing higher placement frequency in audiovisual (e.g., Matthes et al., 2007; Matthes et al., 2012) and print media (Avramova et al., 2017a) has documented linear effects, such that both the positive and negative effects of prominence are enhanced at higher placement frequencies. However, the effects of modality could also level off, as we found for exposure to auditory placements in film. Brand familiarity may further moderate these effects: Previous research shows that brand placement effects are typically stronger for unfamiliar than for familiar brands (e.g., Avramova et al., 2017a; Storm and Stoller, 2015), so the pattern we observed may be stronger for less familiar brands. Another interesting moderator of modality effects may be the level of fit between the placed brand (or product) and the content (genre, plot, characters, emotional tone). Recent work found that prominent placements enhance brand evaluation when both cognitive and affective fit are high, while a negative shift in brand attitude ensues when fit is low (Gillespie et al., 2018). Related to this, given that the current study only used one brand (retail/clothing) in one specific story, it is also important that our findings are replicated for other product categories placed in other types of text in order to test the generalizability of the current findings.

Finally, an interesting question that deserves further attention relates to whether implicit and explicit brand attitudes are similarly affected by brand placements in different media. Several prior studies show that placements may have divergent effects on implicit and explicit measures, although the role of modality (or frequency) has never been investigated, and the evidence has been mixed. For instance, it has been found that the same placement may enhance implicit self-

brand identification yet decrease explicit brand attitude (Gibson et al. 2013) and that subtle visual placements of a familiar brand in a film can improve implicit brand attitudes, especially for viewers who like the movie genre (Redker et al. 2013). On the other hand, using screenshots from a TV program, D’Hooge et al. (2017) found that exposure to prominent (but not subtle) visual placements (i.e., branded products placed more centrally or in close-up) in positively- (vs. negatively-) valenced scenes enhances both implicit and explicit brand attitudes, supposedly via evaluative conditioning. Future research may thus test if our findings with regard to explicit brand evaluation also replicate on implicit measures.

Notably, recent work on the impact of corrective information (warnings about misleading advertising and product recalls) on brand evaluation demonstrates that imagery-based materials (e.g., product recalls communicated via pictures or imagery-evoking text) influence both explicit and implicit attitude towards a previously presented brand, while low-imagery evoking materials only change explicit attitude (Trendel et al., 2018). Applied to the brand placement context, this suggests that different types of placements and different media (e.g., a text-based brand name, e.g. “Nike” vs. a pictorial brand logo, e.g., Nike’s swoosh sign, depicted in a film; a picture of a branded product vs. a verbal brand reference in the text of an illustrated book) may exert divergent effects on implicit and explicit brand attitude. Moreover, individual differences in visual processing style (DeRosia and McQuarrie, 2019), relative propensity to process visual vs. verbal information (e.g., Wyer et al., 2008), or mental imagery vividness (e.g., Marks, 1973) may further moderate these effects, as perceived ability to generate vivid mental imagery has been found to divergently affect transportation and identification with protagonists in filmed and written narratives (Isberner et al. 2019) .

The present study also has some limitations. First, a perfect correspondence between the two modalities in the two media is inherently difficult to achieve and assess: The dialogue (narration) placements may not be entirely equivalent to the auditory (visual) placements. The question is, to what extent they should be. Movies are often based on works of fiction, but even the most faithful adaptation will inevitably represent an (artistic) interpretation of the text. A scene from a movie presents more visual information than the one printed on the page (Jajdelska et al., 2019). Film characters' nonverbal behavior may be more vivid, and hearing their actual speech, with all the subtleties of human voice, may provide a richer, more intensive experience than a written text. However, research in cognitive science and linguistics has demonstrated that readers process language through mental simulation of the described content, which elicits perceptual experiences that closely mirror those resulting from interacting with the real world (see e.g., Barsalou, 2008; Fischer and Zwaan, 2008 for reviews). For instance, an "inner voice" is automatically generated during silent reading of direct speech (i.e., dialogue), which preserves certain perceptual aspects of actual speech, such as speech pace (e.g., Alexander and Nygaard, 2008; Zhou and Christianson, 2015). These findings, as well as the steps we took to control for a number of potential confounds, increase our confidence that the visual/narration and auditory/dialogue placements we used in film/text were highly similar. Still, designing even cleaner manipulations and replicating the present findings in other media is a necessary next step. For instance, comparing the impact of exposure to dialogue placements in a written text and an audiobook (or radio drama) would ensure that the content is perfectly equivalent across media (i.e., no competing or "contaminating" visual information) and would provide more insight into the role of modality in placement effects.

References

- Aaker, D.A., and Bruzzone, D.E. (1985). Causes of irritation in advertising. *The Journal of Marketing*, 49 (2), 47-57.
- Aaker, D.A., and Stayman, D.M. (1990). Measuring audience perceptions of commercials and relating them to ad impact. *Journal of Advertising Research*, 30 (4), 7-17.
- Alexander, J.D., and Nygaard, L.C. (2008). Reading voices and hearing text: talker-specific auditory imagery in reading. *Journal of Experimental Psychology: Human Perception and Performance*, 34 (2), 446-459.
- Arnold, M. (2001). Making books: Placed products and their cost, *The New York Times*, available at <http://www.nytimes.com/2001/09/13/books/making-books-placed-products-and-their-cost.html>
- Avramova, Y. R., De Pelsmacker, P., & Dens, N. (2018). How reading in a foreign versus native language moderates the impact of repetition-induced brand placement prominence on placement responses. *Journal of Brand Management*, 25 (6), 500-518.
- Avramova, Y.R., De Pelsmacker, P. and Dens, N. (2017a). Brand placement repetition in a fictional text.” *International Journal of Advertising*, 36 (1), 38-59.
- Avramova, Y.R., De Pelsmacker, P. and Dens, N. (2017b). Brand placement in text: The short- and long-term effects of placement modality and need for cognition. *International Journal of Advertising*, 36 (5), 682-704.
- Barsalou, L.W. (2008), "Grounded cognition", *Annual Review of Psychology*, 59, 617-645.
- Bhatnagar, N., Aksoy, L., and Malkoc, S. (2004). Embedding brands within media content: The impact of message, media, and consumer characteristics on placement efficacy, in L.J. Shrum (Ed.), *The psychology of media entertainment. Blurring the lines between entertainment and persuasion* (pp. 99-116). Mahwah, NJ: Lawrence Erlbaum.

- Bhatnagar, N., and Wan, F. (2011). Is self-character similarity always beneficial? *Journal of Advertising*, 40 (2), 39-50.
- Boerman, S.C., and E.A. Van Reijmersdal. (2016). Informing consumers about ‘hidden’ advertising: A literature review of the effects of disclosing sponsored content. In P. De Pelsmacker (Ed.), *Advertising in New Formats and Media: Current Research and Implications for Marketers* (pp. 115–46). Bingley: Emerald Group Publishing Limited.
- Boerman, S.C., Reijmersdal, E.A. and Neijens, P.C. (2012). Sponsorship disclosure: Effects of duration on persuasion knowledge and brand responses. *Journal of Communication*, 62 (6), 1047-1064.
- Boerman, S.C., Reijmersdal, E.A. and Neijens, P.C. (2014). Effects of sponsorship disclosure timing on the processing of sponsored content: A study on the effectiveness of European disclosure regulations. *Psychology & Marketing*, 31 (3), 214-224.
- Busselle, R. and Bilandzic, H. (2009). Measuring narrative engagement. *Media Psychology*, 12 (4), 321-347.
- Cacioppo, J.T. and Petty, R.E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, 42 (1), 116.
- Campbell, M.C., and Keller, K.L. (2003). Brand familiarity and advertising repetition effects. *Journal of Consumer Research*, 30 (2), 292-304.
- Campbell, M.C., and Kirmani, A. (2000). Consumers' use of persuasion knowledge: The effects of accessibility and cognitive capacity on perceptions of an influence agent. *Journal of Consumer Research*, 27 (1), 69-83.
- Campbell, M.C., Mohr, G. and Verlegh, P.W.J (2013). Can disclosures lead consumers to resist covert persuasion? The important roles of disclosure timing and type of response. *Journal of Consumer Psychology*, 23 (4), 483-495.

- Chaiken, S., and Eagly, A.H. (1983). Communication modality as a determinant of persuasion: The role of communicator salience. *Journal of Personality and Social Psychology*, 45 (2), 241-256.
- Cowley, E., and Barron, C. (2008). When product placement goes wrong: The effects of program liking and placement prominence. *Journal of Advertising* 37 (1), 89-98.
- De Pelsmacker, P. and Van den Bergh, J. (1999). Advertising content and irritation: a study of 226 TV commercials. *Journal of International Consumer Marketing*, 10 (4), 5-27.
- Davtyan, D., and Cunningham, I. (2017). An investigation of brand placement effects on brand attitudes and purchase intentions: Brand placements versus TV commercials. *Journal of Business Research*, 70, 160-167.
- Dens, N., De Pelsmacker, P., Wouters, M. and Purnawirawan, N. (2012). Do you like what you recognize? The effects of brand placement prominence and movie plot connection on brand attitude as mediated by recognition. *Journal of Advertising* 41 (3), 35-53.
- DeRosia, E. D., & McQuarrie, E. F. (2019). Lost and found: Individual differences in propensity to process visual elements of persuasion. *Psychology & Marketing*, 36 (4), 266-275.
- D'Hooge, S. C., Hudders, L., & Cauberghe, V. (2017). Direct evaluative conditioning in brand placement: The impact of scene valence and prominence on brand placement repetition effects. *Journal of Consumer Behavior*, 16 (5), 452-462.
- Edell, J. A., and Burke, M. C. (1987). The power of feelings in understanding advertising effects. *Journal of Consumer Research*, 14 (3), 421-433.
- Eerland, A., Engelen J.A., and Zwaan, R.A. (2013). The influence of direct and indirect speech on mental representations. *PloS one* 8 (6), e65480.

- Fischer, M.H., and Zwaan R.A. (2008). Embodied language: A review of the role of the motor system in language comprehension. *The Quarterly Journal of Experimental Psychology*, 61 (6), 825-850.
- Fossen, B. L., & Schweidel, D. A. (2019). Social TV, advertising, and sales: Are social shows good for advertisers? *Marketing Science*, 38(2), 274-295.
- Friestad, M., and Wright, P. (1994). The persuasion knowledge model: How people cope with persuasion attempts. *Journal of Consumer Research*, 21 (1), 1-31.
- Friedman, M. (1985). The changing language of a consumer society: Brand name usage in popular American novels in the postwar era. *Journal of Consumer Research*, 11 (4), 927-938.
- Furnham, A., Benson, I., and Gunter, B. (1987). Memory for television commercials as a function of the channel of communication." *Social Behaviour*, 2, 105-112.
- Gibson, B., Redker, C., & Zimmerman, I. (2014). Conscious and nonconscious effects of product placement: Brand recall and active persuasion knowledge affect brand attitudes and brand self-identification differently. *Psychology of Popular Media Culture*, 3 (1), 19.
- Gillespie, B., Muchling, D. D., & Kareklas, I. (2018). Fitting product placements: Affective fit and cognitive fit as determinants of consumer evaluations of placed brands. *Journal of Business Research*, 82, 90-102.
- Green, M.C., Kass, S., Carrey J., Herzig, B., Feeney, R. and Sabini, J. (2008). Transportation across media: Repeated exposure to print and film. *Media Psychology*, 11 (4), 512-539.
- Gunter, B., Furnham, A., and Leese, J. (1986). Memory for information from a party political broadcast as a function of the channel of communication. *Social Behaviour*, 1(2), 135-142.

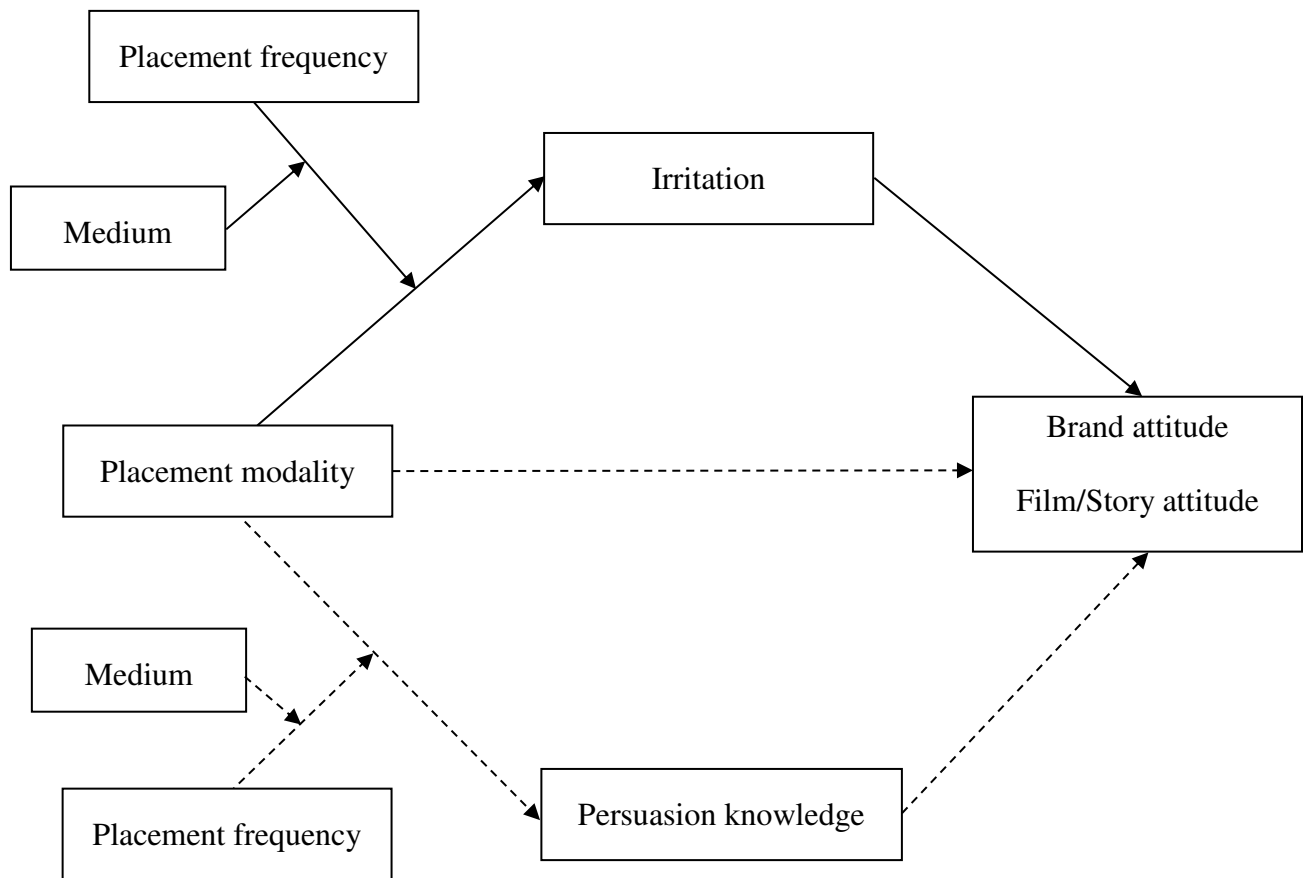
- Gupta, P.B., and Lord K.R. (1998). Product placement in movies: The effect of prominence and mode on audience recall. *Journal of Current Issues & Research in Advertising*, 20 (1), 47-59.
- Hayes, A. F. (2017). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. *Communication Monographs*, DOI:10.1080/03637751.2017.1352100
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.
- Homer, P.M. (2009). Product placements: The impact of placement type and repetition on attitude. *Journal of Advertising*, 38 (3), 21-31.
- Isaac, M.S. and Grayson, K. (2017). Beyond skepticism: Can accessing persuasion knowledge bolster credibility? *Journal of Consumer Research*, 43 (6), 895-912.
- Isberner, M. B., Richter, T., Schreiner, C., Eisenbach, Y., Sommer, C., & Appel, M. (2019). Empowering stories: Transportation into narratives with strong protagonists increases self-related control beliefs. *Discourse Processes*, 56 (8), 575-598.
- Jajdelska, E., Anderson, M., Butler, C., Fabb, N., Finnigan, E., Garwood, I., ... & Schwan, S. (2019). Picture this: A review of research relating to narrative processing by moving image versus language. *Frontiers in Psychology*, 10 (1161), 1-15.
- Kuijpers, M.M., Hakemulder, F., Tan E.S., and Doicaru, M.M. (2014). Exploring absorbing reading experiences: Developing and validating a self-report scale to measure story world absorption. *Scientific Study of Literature*, 4 (1), 89–122.
- Law, S, and Braun, K. A. (2000). I'll Have What She's Having: Gauging the Impact of Product Placements on Viewers. *Psychology and Marketing*, 17 (12), 1059–1075.

- Lehu, J. M., and Bressoud, E. (2008). Effectiveness of brand placement: New insights about viewers. *Journal of Business Research*, 61 (10), 1083-1090.
- Lorenzon, K., and Russell, C. A. (2012). From apathy to ambivalence: How is persuasion knowledge reflected in consumers' comments about in-game advertising? *Journal of Marketing Communications*, 18 (1), 55-67.
- Magliano, J. P., Loschky, L. C., Clinton, J., & Larson, A. M. (2013). Is reading the same as viewing? An exploration of the similarities and differences between processing text- and visually based narratives. In B. Miller, L. Cutting, & P. McCardle (Eds.), *Unraveling the Behavioral, Neurobiological, and Genetic Components of Reading Comprehension* (pp. 78–90). Baltimore, MD: Brookes Publishing Co.
- Marks, D. F. (1973). Visual imagery differences and eye movements in the recall of pictures. *Perception & Psychophysics*, 14 (3), 407-412.
- Matthes, J., and Naderer, B. (2016). Product placement disclosures: Exploring the moderating effect of placement frequency on brand responses via persuasion knowledge. *International Journal of Advertising*, 35 (2), 185-199.
- Matthes, J., Schemer, C., and Wirth, W. (2007). More than meets the eye: Investigating the hidden impact of brand placements in television magazines, *International Journal of Advertising*, 26 (4), 477-503.
- Matthes, J., Wirth, W. Schemer, C., and Kissling, A. (2011). I see what you don't see. *Journal of Advertising*, 40 (4), 85-100.
- Olsen, L.E., and Lanseng, E.J. (2012). Brands in texts: Attitudinal effects of brand placements in narrative fiction, *Journal of Brand Management*, 19 (8), 702-711.

- Redker, C., Gibson, B., & Zimmerman, I. (2013). Liking of movie genre alters the effectiveness of background product placements. *Basic and Applied Social Psychology*, 35 (3), 249-255.
- Russell, C.A. (2019). Expanding the agenda of research on product placement: A commercial intertext. *Journal of Advertising*, 48 (1), 38-48.
- Russell, C.A. (2002). Investigating the effectiveness of product placements in television shows: The role of modality and plot connection congruence on brand memory and attitude, *Journal of Consumer Research*, 29 (3), 306-318.
- Russell, C.A. and Stern B.B. (2006). Consumers, characters, and products: A balance model of sitcom product placement effects. *Journal of Advertising*, 35 (1), 7-21.
- Sparks, J.R., Areni, C.S., and Cox C.K. (1998). An investigation of the effects of language style and communication modality on persuasion. *Communications Monographs*, 65 (2), 108-125.
- StephenFollows (2014). What are the highest-grossing movie adaptations?, available at: <https://stephenfollows.com/highest-grossing-movie-adaptations/>
- StephenFollows (2015). How original are Hollywood movies?, available at <https://stephenfollows.com/how-original-are-hollywood-movies/>
- Storm, B.C., and Stoller, E. (2015). Exposure to product placement in text can influence consumer judgments. *Applied Cognitive Psychology*, 29 (1), 20–31.
- Trendel, O., Mazodier, M., & Vohs, K. D. (2018). Making warnings about misleading advertising and product recalls more effective: An implicit attitude perspective. *Journal of Marketing Research*, 55 (2), 265-276.
- Tukachinsky, R. (2014). Experimental manipulation of psychological involvement with media. *Communication Methods and Measures*, 8 (1), 1-33.

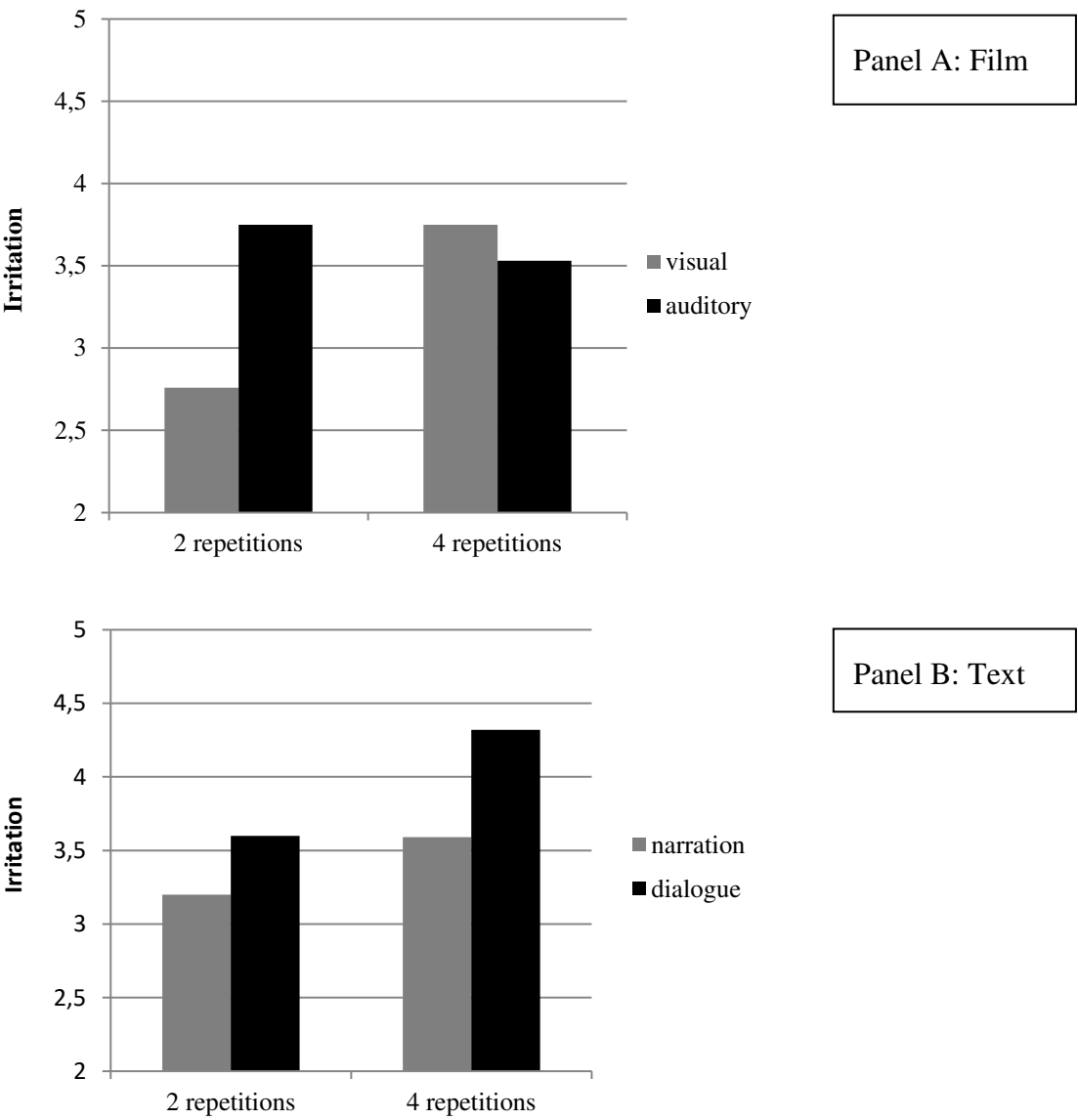
- Van Reijmersdal, E.A., Neijens, P.C. and Smit, E.G. (2009), “A new branch of advertising,” *Journal of Advertising Research*, 49 (4), 429-449.
- Van Reijmersdal, E.A., Smit, E.G., and Neijens, P.C. (2010). How media factors affect audience responses to brand placement. *International Journal of Advertising*, 29 (2), 279-301.
- Van Reijmersdal, E. A., Fransen, M. L., van Noort, G., Oprea, S. J., Vandeberg, L., Reusch, S., ... & Boerman, S. C. (2016). Effects of disclosing sponsored content in blogs: How the use of resistance strategies mediates effects on persuasion. *American Behavioral Scientist*, 60 (12), 1458-1474.
- Wojdyski, B. W., & Evans, N. J. (2020). The Covert Advertising Recognition and Effects (CARE) model: Processes of persuasion in native advertising and other masked formats. *International Journal of Advertising*, 39 (1), 4-31.
- Wyer Jr, R. S., Hung, I. W., & Jiang, Y. (2008). Visual and verbal processing strategies in comprehension and judgment. *Journal of Consumer Psychology*, 18 (4), 244-257.
- Yao, B., Belin, P., and Scheepers, C. (2011). Silent reading of direct versus indirect speech activates voice-selective areas in the auditory cortex, *Journal of Cognitive Neuroscience*, 23, 3146-3152.
- Zhou, P., and Christianson, Z. (2015). I “hear” what you’re “saying”: Auditory perceptual simulation during silent reading, *The Quarterly Journal of Experimental Psychology*, 69 (5), 972-95.

Figure 1: Conceptual model



Note: Solid lines represent hypothesized relationships; dashed lines represent relationships for which no hypotheses (or predictions of null effects) were formulated.

Figure 2: The impact of placement modality and placement frequency on irritation with the placements in film (Panel A) and text (Panel B)



Note: Estimates are based on covariates' sample means. Irritation and all covariates were measured on 7-point scales.

Table 1: Scale items and descriptive statistics for all measured variables

Construct	Items and scale anchors	Mean (SD)	Cronbach's Alpha
Brand attitude	negative/positive, unattractive/attractive, dislike/like, low/high quality;	4.91 (1.08)	.92
Film/Story attitude	dislike/like, negative/positive, unfavorable/favorable, events were unrealistic/realistic, characters were unrealistic/realistic	4.59 (1.30)	.90
Persuasion knowledge	The reference to Esprit in the film/story is a form of advertising; It looks like Esprit has paid the makers/author to insert the brand in the film/story; The purpose of inserting Esprit in the film/story is to make people like or buy the brand. (fully disagree/fully agree)	5.08 (1.29)	.87
Irritation	I found the manner in which Esprit was integrated in the film/story irritating. (fully disagree/fully agree)	3.61 (1.74)	-
Absorption in the story/film	18 items (SWAS, Kuijpers et al., 2014), e.g.: When I was watching the film/reading the story, it sometimes seemed as if I were in the story world too; I felt how the main character was feeling. (fully disagree/fully agree)	4.17 (1.12)	.95
Attitude towards the character	not at all attractive /very attractive, not at all kind /very kind, not at all trustworthy/very trustworthy	4.77 (.91)	.73
Plot connection	Esprit played an important role in the film/story. Without the references to Esprit, the film/story would be different Esprit was connected to the plot. (fully disagree/fully agree)	2.57 (1.26)	.84
Brand familiarity	How familiar are you with the brand Esprit? (not at all /very familiar)	4.39 (1.61)	-
Effort	The film/story...: was difficult /easy to process, was difficult/easy to understand, required little/much effort (R)	5.72 (1.05)	.70

Note. All variables were measured on 7-point Likert or bipolar scales.

Table 2: The interactive effects of placement modality, frequency, and medium on irritation

Predictor	B	SE	t	p	LLCI	ULCI
Constant	5.403	.746	7.238	.000	3.934	6.871
Modality	.405	.355	1.141	.255	-.294	1.104
Frequency	.396	.334	1.186	.236	-.261	1.052
Medium	-.438	.359	-1.218	.224	-1.145	.269
Modality*Frequency	.325	.475	.685	.494	-.609	1.259
Modality*Medium	.583	.483	1.207	.228	-.367	1.534
Frequency*Medium	.600	.475	1.263	.207	-.335	1.535
Modality*Frequency*Medium	-1.533	.664	-2.308	.022	-2.840	-.226
Brand familiarity	-.089	.052	-1.711	.088	-.191	.013
Attitude towards character	.105	.108	.977	.329	-.107	.318
Absorption	-.346	.092	-3.781	.000	-.527	-.166
Plot connection	.031	.073	.423	.673	-.112	.174
Effort	-.167	.085	-1.963	.051	-.335	.000

Table 3: Conditional effects of placement modality (auditory/dialogue vs. visual/narration) on irritation within each level of frequency and medium

Frequency	Medium	B	SE	t	p	LLCI	ULCI
2	Film	.988	.328	3.017	.003	.344	1.633
4	Film	-.220	.337	-.652	.515	-.883	.443
2	Text	.405	.355	1.141	.255	-.294	1.104
4	Text	.730	.316	2.314	.021	.109	1.351

Table 4: Conditional indirect effects of placement modality (auditory/dialogue vs. visual/narration) on brand attitude via persuasion knowledge within each level of frequency and medium

Mediator	Frequency	Medium	Effect	SE	LLCI	ULCI
Persuasion Knowledge	2	Film	.028	.026	-.016	.088
	4	Film	-.038	.03	-.111	.009
	2	Text	.012	.026	-.041	.067
	4	Text	.021	.026	-.019	.009

Table 5: Conditional indirect effects of placement modality (auditory/dialogue vs. visual/narration) on brand attitude via irritation within each level of frequency and medium

Mediator	Frequency	Medium	Effect	SE	LLCI	ULCI
Irritation	2	Film	-.103	.050	-.215	-.022
	4	Film	.023	.042	-.050	.120
	2	Text	-.042	.046	-.155	.028
	4	Text	-.076	.047	-.188	-.008

Table 6: Conditional indirect effects of placement modality (auditory/dialogue vs. visual/narration) on film/story attitude via persuasion knowledge within each level of frequency and medium

Mediator	Frequency	Medium	Effect	SE	LLCI	ULCI
Persuasion Knowledge	2	Film	.006	.019	-.031	.049
	4	Film	-.008	.023	-.059	.039
	2	Text	.002	.014	-.023	.039
	4	Text	.004	.016	-.025	.044

Table 7: Conditional indirect effects of placement modality (auditory/dialogue vs. visual/narration) on film/story attitude via irritation within each level of frequency and medium

Mediator	Frequency	Medium	Effect	SE	LLCI	ULCI
Irritation	2	Film	-.161	.060	-.293	-.054
	4	Film	.036	.061	-.076	.167
	2	Text	-.066	.061	-.195	.050
	4	Text	-.119	.061	-.257	-.016