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Persuasive Communication

Master Thesis

Native or not native?

The effects of different online advertising formats on consumers' memory and the mediating role of attention

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Abstract

Native advertising has emerged as a dominant advertising format on the Internet during the last years in the attempt to counter consumers' avoidance of traditional forms of online advertising. Given its increasing importance and its novelty as an advertising format, the present study tests and compares the effects of native advertising and traditional online advertising on consumers' explicit and implicit memory, and analyses the role of attention towards the advertisement as mediating factor. Moreover, the study takes into account the impact of users' task-involvement on implicit and explicit memory and its interaction with different advertising formats. Results show that native advertising prompts greater memory, both implicit and explicit, as it is able to catch more attention than banner advertisements do. In contrast with previous findings, the level of task-involvement seems to affect only implicit memory, while there is no significant effect on users' explicit memory. Similarly, the analyses show no significant interaction between advertising format and task-involvement.

Keywords: native advertising, banner advertising, online advertising, task-involvement, memory, attention.

Introduction

On 13 June 2014, readers of the *New York Times* website came across a fairly elaborate, nearly 1500-word story bearing the title 'Women Inmates: Why the Male Model Doesn't Work'. The story, which appeared on the homepage among other editorial contents, provided readers with video, chart, audio, and text – as any other *New York Times* online article does alike – about female incarceration in the United States. Readers were clued into the promotional nature of the article by a little box stating 'Paid Content', combined with the logo of Netflix and the one of its original series 'Orange is the New Black', which is – indeed – a show about one woman's experience in prison. The *New York Times* article brought to the surface the increasingly popular practice of what has been labelled as 'native advertising', and, with the biggest name in online news taking part in this practice, it stopped being a buzzword and started being a marketing reality.

Native advertising is here defined as the paid, subtle media placement offered by an online publisher that fits forms, functions, and qualities of the surrounding media content and can be filled with any type of content a brand wants to promote (Manic, 2015; Wojdynski, 2016). For instance, Wendy's – an American fast food restaurant company – heavily employs native advertising on BuzzFeed. However, their content does not directly have to do with their various products. Rather, they post entertaining and humorous content under the form of quizzes or list of tweets to attract BuzzFeed's readers, resembling the forms, functions, and qualities of the traditional editorial content of the website. Native advertising is also commonly known in the media industry as sponsored content (Wojdynski, 2016). However, the term 'native advertising' seems to have become the most widely used name for this practice, because this label clearly transports its inclusion principles. Firstly, the format of the message matches, or is 'native' to, the formats, functions and qualities of the non-paid content presented on the same online platform, and, secondly, the content of such messages is actual advertising (Wojdynski, 2016).

In its online whitepaper, the Interactive Advertising Bureau (IAB) offers a list of six types of native advertising formats. These forms include: in-feed units (described above), paid search units (for instance, the ads at the top of a search engine platform), recommendation widgets (i.e., related or suggested articles in news websites), promoted listings (on shopping websites such as Amazon or Etsy), in-ad-with-native-element units (i.e., AppSavvy), and hybrid units (IAB, 2013). Of these six formats, in-feed units are the most common (IAB, 2013). More specifically, they consist of promoted articles in the normal feed section(s) of the publisher's website, where the content has been written by, or in partnership with, the publisher's team to match the surrounding stories and

their styles, and contains subtle references to the brand (IAB, 2013). They can be sold with or without a guaranteed placement (so that the buyer knows/does not know exactly what context will surround the in-feed unit), and use sponsorship disclosure labels such as 'Presented by' (i.e. BuzzFeed, Huffington Post), 'Suggested Post' (i.e., Facebook), or 'Paid for by' (i.e. The Guardian) (IAB, 2013). Therefore, the present study takes into account in-feed units as the most representative native advertising format.

Native advertising has been mainly developed in the attempt to counter consumer avoidance of traditional forms of online advertising (Wojdynski, 2016). These formats range from early 1990s electronic mailing lists to pop-ups and banner (Li & Leckenby 2007), which represent the most common format of traditional online advertising (Resnick & Albert, 2014). Benway (1998) was the first to detail the avoidance of traditional online advertising through a phenomenon called 'banner blindness'. It commonly refers to the findings that Internet users avoid looking at (Drèze & Hussherr, 2003) and paying attention to (Chatterjee, 2008) advertising banners inserted on web pages, or, more generally, everything remotely resembling an advert. Indeed, the key difference between native advertising formats and traditional forms of online advertising is their level of subtlety: that is, native advertising formats – differently from traditional online advertising, are mixed with and take the form of editorial contents. Consequently, native advertising is virtually able to capture the same level of attention as the editorial content does, which may explain its success (Wojdynski, 2016).

In fact, while the economic triumph of native advertising over traditional online advertising is undisputed, for instance, *Forbes* reported in late 2014 that nearly 30% of its digital revenue for the year came from its native advertising platform 'BrandVoice' (Shields, 2015), a clear, general understanding of native advertising effectiveness has not emerged. Indeed, a great amount of time has been exerted debating whether or not various online advertising formats are native, rather than focusing on their mechanisms and efficacy compared to other advertising formats (IAB, 2013). The aim of the present study is, therefore, to test and compare the effects of native advertising (in the form of in-feed units) and traditional online advertising (in the form of banners) on consumers' memory and to analyse the mediating role of attention towards the advertisement. A good understanding and comprehension of the effects of these different online advertising formats and the mechanisms behind them can eventually help researchers to explain how and to what extent native advertising affects consumers' memory, and advertisers to choose the most suitable format for their online advertising campaign goals.

Indeed, memory is described by most advertising effectiveness models as an essential condition for advertisements to have any impact on consumers (Belch & Belch, 2014). Although research has already shown how native advertising results in more positive consumers' affective reactions compared to traditional online advertising (Tutaj & van Reijmersdal, 2012), whether native advertising formats may affect consumers' cognitive responses – that is, their explicit and implicit memory, requires much greater exploration. According to the explicit-implicit memory framework (Duke & Carlson, 1994), explicit memory details an individual's conscious attempt to recollect an encoding episode (for instance, advertisement or brand exposures) and intentional efforts to retrieve the information that was presented. In contrast, implicit memory is described as the unintentional, unconscious access of previously encountered information (Krishnan & Trappey, 1999; Northup & Mulligan, 2013). Studying both explicit and implicit memory is a critical issue for determining online advertising effectiveness. For instance, in their eye-tracking study, Drèze and Hussherr (2003) showed that more than half of the participants actually looked at the banner advertisement at least once, although only 11% of the participants were able to explicitly recall it. Nonetheless, in his series of studies, Yoo (2007, 2008, 2009) showed how, despite web users' avoidance and inability to explicitly recall website advertisements they were exposed to, they could still formulate an implicit memory of them. In fact, there is already empirical evidence that suggests that implicit memory remains steady when the presentation of the brand is subtle, or takes place under low level of advertisement processing (Vandeberg, Wennekers, Murre, & Smit, 2013) - that is, in those conditions where explicit memory suffers. Following this, a minimal correlation between advertisement's explicit recall and sales has been reported by field studies, despite a tangible link between advertisement spending and sales (Lee, 2002), which suggests a great implicit memory influence on brand's market realisation. By measuring both implicit and explicit memory, the current study provides further empirical evidence for memory dissociations and makes available to marketers how native advertising performs in relation to explicit and implicit memory.

A motivational construct known to moderate advertising processing is 'task involvement' (Lord & Putrevu, 1998; Resnick & Albert, 2016; Wang, 2006). Although studies have used different definitions and labels of task-involvement, they are consistent in the explanation of its effect: the higher the user's task-involvement, the less likely he or she is to process an advertisement (Heinz & Mekler, 2012; Kim & Lee, 2011; Resnick & Albert, 2014). Park, Lee, and Han (2007) define high or low task-involvement as whether online users have a goal in mind when visiting a website. High task-involved users have specific tasks to accomplish when visiting a website. For instance, they might want to obtain specific products, services, or information. With a strong focus on this primary task, these users look directly for specific information within the

website, undertaking a *goal-directed behaviour* (Novak, Hoffman, & Duhachek, 2003). On the other hand, low task-involved users have no task-specific goals for browsing an online page, mainly guided by enjoyment or entertainment (Hsieh, Hsieh, Chiu, & Yang, 2014; Wolfinbarger & Gilly, 2001). They likely surf the website in a relatively undirected way, without focusing their attention on any specific information, undertaking an *exploratory behaviour* (Novak, Hoffman & Duhachek, 2003). As research has already shown that task-involvement affects advertising processing on print media (Lord & Putrevu, 1998) or in relation to banner advertising (Resnick & Albert, 2016), the present study aims at providing further empirical evidence regarding native advertising formats. In addition, new technologies allow to cluster and profile online users according to their navigational behaviour (e.g., goal-directed or exploratory) by analysing users' weblog metrics (Neelima & Rodda, 2016). As a result, it becomes possible for marketers to predict users' tasks when they first arrive on a website (Athukorala, Głowacka, Jacucci, Oulasvirta, & Vreeken, 2016; Resnick & Albert, 2016). Therefore, knowing the impact of users' task-involvement on implicit and explicit memory - and how this interacts with different advertising formats, will help marketers to adapt their advertising campaigns on different websites and for different target populations.

Theoretical Framework

Effect of online advertising format on implicit and explicit memory

Research has suggested that the nature of the online advertising format may influence consumers' cognitive reactions to online advertising (Burns & Lutz, 2006). There is a substantial corpse of literature focusing on banner advertising efficiency that reports that explicit memory for banner advertising messages is quite low (Chatterjee, 2008; Drèze & Hussherr, 2003; Heinz & Mekler, 2012). Benway (1998) demonstrated that web users tend to avoid looking at banner advertisements even when they are designed to be attention-grabbing, with 80% of the participants in this study stating that they did not recall any advertisements at all. The same pattern has been found in a more recent study, where only 6% of the participants correctly recalled the online banner advertisements they were exposed to (Heinz & Meckler, 2012).

In online contexts, advertising formats like banners have to compete for consumers' viewing attention with editorial content, and this may explain their low efficiency. Indeed, a study of Hervet, Guérard, Tremblay and Chtourou (2011) shows that banner advertisements are viewed for a shorter amount of time compared to editorial content. These findings are in line with the intentional exposure theory, which states that consumers intentionally expose themselves to any medium for the editorial content rather than the advertisements, and therefore they spend less effort in

processing advertising messages (Lord & Putrevu, 1998). As a result, intentional exposure leads to higher attention to editorial messages rather than to advertising ones (Lord & Putrevu, 1998; Van Reijmersdal, Neijens, & Smit, 2005). To this extent, when considering that in-feed units are positioned within the 'feed' section of any websites (for instance, the page 'Home' for Facebook and Twitter, or the homepage on newspapers' websites), it becomes clear that users' attention to native advertisements may be virtually equivalent to their attention towards editorial content, which in turn results in greater explicit memory.

Furthermore, a study by Yoo (2008) concluded that explicit and implicit memory is affected in diverging ways based on the varying levels of attention paid to Internet adverts. Indeed, both explicit and implicit memory performance is enhanced when consumers pay greater attention to, that is, consciously process, Web advertisements (Yoo, 2008), while non-directed attention - resulting in unconscious processing of advertisements (for instance, when users first visit and scan web pages), only affects implicit memory (see Figure 1).

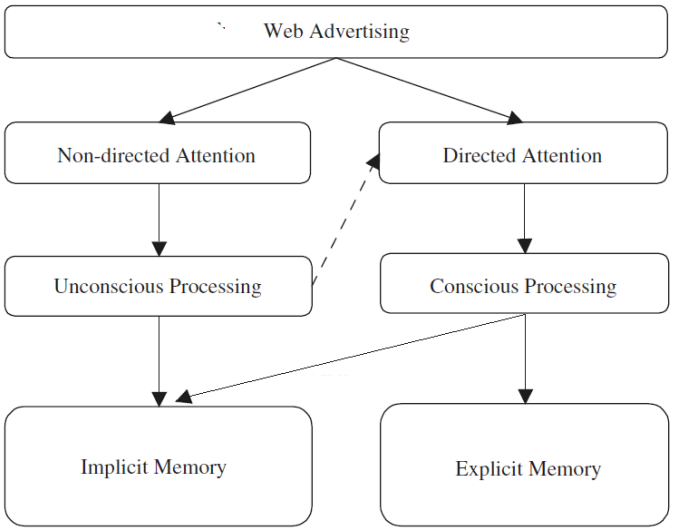

Figure 1. *Different levels of attention towards advertisement contribute differently to implicit and explicit memory of it. Adapted from Yoo (2008).*

Therefore, if native advertising can encourage more consumer attention than traditional online advertising, as it more accurately imitates editorial content, it is likely to result in both greater explicit and implicit memory when compared to banner advertising. Thus, the following hypotheses are formulated:

H1. Native advertising in the form of in-feed units results in (a) greater advertisement implicit memory and (b) brand explicit memory compared to traditional online advertising in the form of banners.

H2. The effect of online advertising format (in-feed units VS banners) on (a) implicit and (b) explicit memory is mediated by attention towards the advertisement.

Effect of task-involvement on explicit and explicit memory

Research has shown that the majority of traditional advertisements have little effects on consumers' memory (Cho & Cheon, 2004), partly because consumers are involved in primary tasks that limit their advertisement processing ability (Angell, Gorton, Sauer, Bottomley, & White, 2016; MacInnis, Moorman, & Jaworski, 1991; Shapiro, MacInnis, & Heckler, 1997; Wang, 2006). These results are in line with the limited capacity model of mediating message processing: according to the model, people are limited capacity information processors (Lang, 2000). They have only a restricted number of cognitive resources to devote to the tasks of perceiving, encoding, understanding, and remembering a message at any point in time (Lang, 2000). Cognitive resources have to be allocated to a message in order for it to be processed through the four steps mentioned above (Lang, 2000). Resources can be allocated as a result of *automatic* or *controlled* processing mechanisms (Lang, 2000) – that is, subconsciously or deliberately. The controlled allocation is related to a person's goals and interests (Lang, 2000). When one's available cognitive resources are not sufficient– either when a message recipient chooses to allocate fewer resources to process the message than it requires, or when the message may require more resources than the message recipient has available, message processing suffers (Lang, 2000).

When online users are highly involved in a primary task – that is, engaging in a goal-directed behaviour, they are likely to allocate almost all their cognitive resources to that primary task. This situation represents a typical incidental advert exposure, in which a consumer's processing of advertisements is done at a minimal level (Lavie, Hirst, De Fockert, & Viding, 2004). In these situations, consumers have little to no spare resources to process and memorize – either subconsciously or deliberately – ad stimuli surrounding the primary information. In other words, memory 'traces' of this secondary information are likely to be too weak to be retrievable (Lang, 2006), which causes poor explicit and implicit memory. By contrast, when online users engage in exploratory behaviours, they are likely to process other forms of media content, which may include advertisements along with editorial content (Danaher & Mullarkey, 2003). Indeed, Danaher and Mullarkey (2003) showed how web users in goal-directed conditions were much less likely to explicitly recall advertisements than users who were surfing a site without any specific goal. Similarly, Resnick and Albert (2014) found that there was a higher degree of advertisement

avoidance for tasks that had a greater cognitive requirement on the user. These results are in line with the load theory of attention by Lavie and colleagues (2004). It entails a passive mechanism, called *perceptual selection* that involves excluding irrelevant information from user's perception when the primary task at hand requires a high cognitive load. That is, irrelevant distractor stimuli, such as advertisements, are cognitively ignored simply because the distractions are not perceived due to the insufficient capacity for their processing (Lavie *et al*., 2004). Thus,

H3. Individuals' (a) advertisement implicit and (b) brand explicit memory are higher in the low task-involvement condition than in the high task-involvement one.

Interaction between online advertising format and task-involvement

As it has been pointed out, when users browse the Internet in a low task-involvement condition, thus engaging in an exploratory behaviour, they do not have a clear object towards allocating their available pool of cognitive resources. This makes the allocation of cognitive capacities to online advertising more likely to happen than when online users are highly involved. However, users tend to avoid looking at areas where they consider likely to find banner advertising (Ferreira *et al.*, 2011). Indeed, users develop the ability to screen out ads intituively on the basis of prior experiences, which can be considered a learned automatic response (Walsh, 2010). In fact, there is consistent evidence to suggest that the more minimal the user's focus, the less likely they are to devote attention to the adverts (Owens, Chaparro, & Palmer, 2011), particularly when an ad is positioned on a website in a place typically associated with advertising (Owens et al., 2011; Resnick & Albert, 2014). Given the integration of native advertising with the regular editorial content of a website, native advertising formats will be more likely to result in greater memory compared to banner advertisements when users are low task-involved.

However – following the load theory of attention (Lavie *et al.*,2004), in highly-involved situations, users might be so focused on their primary task that their *perceptual selection* may be even extended to task-irrelevant editorial content, which includes native advertising units. Consequently, the effect of native advertising on users' memory, compared to traditional advertising, will be weakened in highly-involved situations. These arguments lead to the following hypothesis:

H4. The effect of advertising format on (a) advertisement implicit and (b) brand explicit memory is moderated by task-involvement, such that it will be more pronounced for individuals in the low task-involvement condition and less pronounced in the high-involvement one.

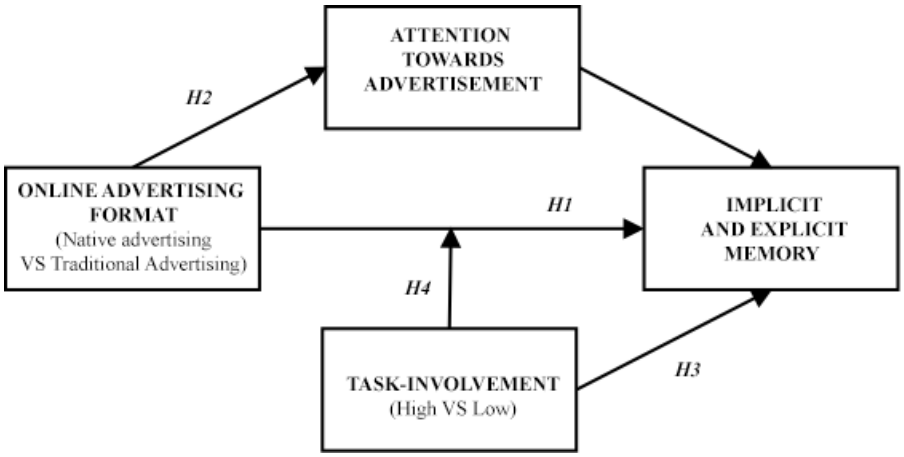

Figure 2. Conceptual model of the present study

Furthermore, as literature has shown that users' web experience influence how they react to advertising (Mallinckrodt & Mizerski, 2007), web experience was included in the analyses as control variables. Moreover, since the experiment entails a word completion test, English language skills were included as well.

Method

Design

In order to test the hypotheses, a 2 (Online advertising format: in-feed units X banner advertising) x 2 (Level of task-involvement: high X low) randomized between-subject factorial design has been employed with explicit and implicit memory responses as dependent variables and attention towards advertisement as mediator.

Materials and Stimuli

In an attempt to limit the possibility of prior knowledge and familiarity regressively impacting the results validity, some experimental research has opted to use fictitious brands and websites on their test subjects (Dahlen, 2001; Danaher & Mullarkey, 2003; Yoo, 2008). Nonetheless, this research follows the suggestion to expand online advertising effectiveness knowledge to real brands and, more importantly, clickable websites (Tutaj & van Reijmersdal, 2012; Yoo, 2007).

Product category and target brand – The product category and the target brand for the present study have been selected following the results of a first pre-test. Since the final experiment's potential participants would not have been restricted to a specific demographic, it was important to avoid the trap of too much popular as well as niché product categories and to identify therefore a brand which most people have a presumed medium level of familiarity with. Therefore, pre-test participants (N = 28) were asked to name up to five brands as they first think of giving a specific product category (see Appendix A for the list of product categories). Based on the pre-test results, one product category, banks, was selected, as the average number of brands named within this category (4.18) was the nearest to the overall mean value (M = 4.20, SD = 0.30). Within this product category, Deutsche Bank resulted to be an international brand with an average level of popularity, as it was mentioned 6 times, in contrast with the most popular brand, ING Bank, which was named 11 times.

Website – Despite a large corpse of studies employed static, simple screen captures of either fictional or real web pages (Kim & Lee, 2011; Porta, Ravarelli, & Spaghi, 2013; Tutaj & van Reijmersdal, 2012), the present study employs a real, clickable website that participants can browse entirely. Given the choice of product category and brand, an online newspaper, The Guardian, was selected as a suitable type of contextual website with an international popularity on which the stimuli would appear, as banks advertisements and native advertising formats are here assumed to be common on newspapers websites. Two cloned versions of the Guardian's website has then been created[1], one for each advertising format.

Online Advertising Format – For the native advertising format condition, an in-feed unit was employed (see Appendix B): online shopping security was selected as the main topic for the native advertising unit since the target brand was a bank institution and the experiment took place during the Christmas period. Following this, real editorial content has then been adapted to fit the chosen topic and target brand, as well as to resemble the editorial style of The Guardian. The in-feed unit had dimensions and disclosure label that the Guardian website normally uses for its in-feed units - that is, it was made up of four news articles and disclosed by the label 'Paid for by'. On the other hand, the banner advertisement has been developed on the basis of real online banners of the target brand (see Appendix B). The banner addressed the chosen topic and its dimensions (250 x 375 pixels) were the same as the Guardian often uses for its banner advertisements. Both the banner and the in-feed unit were present only in the top part of the homepage and were not avoidable through

[1] The two websites can be browsed at www.antoniopolito.it/EP1/index/www.theguardian.com/international.html (native advertising version) and www.antoniopolito.it/EP2/index/www.theguardian.com/international.html (traditional advertising version)

ad blockers. Moreover, it was ascertained that no other pre-existing advertising appeared on any page of the website.

Task-Involvement – The present study employs a task-involvement manipulation by embedding role-playing instructions within the introductory pages of the experiment. This is a common way of manipulating participants' involvement in research settings (Liu & Shrum, 2009; Park et al., 2007; Petty & Cacioppo, 1986; Resnick & Albert, 2014). Participants in the high task-involvement conditions were told to look for and report the author name of a specific article (namely, 'The surprising factors driving murder rates: income inequality and respect') to be found in the homepage. In contrast, participants in the low task-involvement condition were told to freely and leisurely browse the website

Measures

Dependent Variables

In advertising research, aided and unaided brand recall are typical examples of explicit memory measures (Belch & Belch, 2014). Respondents are instructed to recall past brand exposures and then asked to remember or recognise specific information pertaining to the aforementioned exposure. In contrast, a word-fragment completion task is a common measurement for advertisement implicit memory (Duke & Carlson, 1994; Yang *et al*., 2014; Yang, Roskos-Ewoldsen, Dinu, & Arpan, 2006; Yoo, 2007), in which respondents have to complete a set of target (linked to a previous exposure) and distractor (not linked to a previous exposure) word-fragments, without any explicit mention of the prior exposure. When comparing the completion rates of both target and distractor word fragments, if the former completion rate is significantly greater then it suggests the presence of a priming effect, and therefore it can be assumed that implicit memory has been formed (Shapiro & MacInnis, 1992).

Implicit memory – Implicit memory was measured with a word fragment completion task. Subjects were asked to complete words on the list to the best of their abilities. The experimental set of target and distractor words has been selected through a second pre-test. Pre-test participants (N = 42) were asked to complete as quickly as they could 36 word fragments. Of these, 18 words were retrieved from the target advertisements, while the remaining ones were selected randomly through a word generation software. Words were chosen to avoid stems that were potentially too easy (resulting in high completion rates) or too difficult to complete (resulting in low completion rates). The mean target words' completion rate was 27.1%, while the mean distractor words' completion

rate was 28.3%. Results of a paired t-test revealed that target and distractor stems did not result in significantly different completion rates, t (41) = -1.99, p = .052. Based on the criteria employed in prior studies (Tulving & Schacter, 1990; Yoo, 2007), 6 distractor and 6 target words with no higher than 46% completion rates and no lower than 15% were selected (see Appendix C for the full lists of fragments) from the initial pool of 36 stems. In the final experiment, each correct completion of target and distractor words was coded with 1, and then successful completions for both target (implicit memory) and distractor words were added up (minimum = 0, maximum = 6; M_{target} = 2.36, SD_{target} = 1.83; $M_{\text{distractor}}$ = 1.05, $SD_{\text{distractor}}$ = 1.42), as well as the difference between target and distractor scores (priming effect) was computed (M = 1.32, SD = 2.25).

Explicit memory – Explicit memory has been assessed by both aided and unaided brand recall. Unaided brand recall was measured with one open question: "Please name all brands, as specifically as possible, that you remember being advertised on The Guardian's website". Reporting the target brand was coded with 1, while all the cases where the target brand was not listed were coded with 0 (M = 0.24, SD = 0.43). Aided brand recall was measured with one item: "Which of the following brands was advertised on the Guardian's website?", anchored to a sequence of twelve brands retrieved from the product category pre-test. In addition, the option 'None of these' and 'I don't know' were included. The sequence of options was randomized for every participant. Only one choice was possible. Correct aided recall of the target brand was coded with 1, incorrect aided recall was coded with 0 (M = 0.28, SD = 0.45).

Mediator

Attention towards the advertisement – Attention towards the advertisement has been measured in a similar manner as it has been done by Yoo (2008). In his study about implicit and explicit memory towards online banner advertisements, participants' attention was manipulated to be directed and non-directed towards the advertisement. To check whether the manipulation was effective, advertisement recognition rates were compared across condition, demonstrating that respondents' recognition rates in the directed attention group were significantly higher than those for the non-directed attention group, the latter being statistically equivalent to the recognition rates of the no-advertisement group (Yoo, 2008). Following this approach, attention towards advertisement was measured by asking the participants "Which of the following banners/elements was on the Guardian's website?". They were shown three different banners or in-feed units (accordingly to the participants' group) in a random order, including the target ad along with two fillers. In addition, the option 'None of these' was included. Correct advertisement recognition was coded with 1, incorrect advertisement recognition was coded with 0 (M = 0.56, SD = 0.50).

Manipulation Check

Task-Involvement – In order to check the manipulation, participants in the high task-involvement condition were asked: “To me, finding the author name of the article ‘The surprising factors driving murder rates: income inequality and respect" has been…’, while participants in the low task-involvement condition were asked “To me, browsing freely and leisurely the Guardian's website has been…”. Both questions were anchored to the same 5 items (‘attention-consuming’, ‘challenging’, ‘effortless’, ‘concentration-demanding’, ‘intense’), measured on a 7-point scale ranging from -3, ‘Strongly disagree’, to 3, ‘Strongly agree’. For these 5 items, an exploratory principal component analysis was conducted. It showed that only one component has an eigenvalue above 1 (EV = 3.63, R^2 = 0.73), meaning that the 5 items form a single uni-dimensional scale, measuring participants perceived task-involvement. Reliability of this scale is satisfactory, as its Cronbach's alpha is equal to .90. Subsequently, mean scores of the perceived task-involvement scale were calculated forming the perceived task-involvement level (M = - 0.48, SD = 1.54).

*Control Variable*s

Web experience was measured with two different questions: “How many days per week on average do you use the Internet, either for personal use and work?”, and “How many hours per day on average do you use the Internet?”. To accurately represent the participants’ web experience, an average number of hours per week was calculated (M = 38.76, SD = 19.05). Related to users’ web experience and given the choise of a news website as stimulus, News websites familiarity (M = 6.43, SD = 7.64) and The Guardian’s website familiarity (M = 0.56, SD = 1.45) were also calculated in the same manner. In addition, self-reported English language skills (M = 4.33, SD = 1.38) and level of English language certificate (M = 5.08, SD = 1.63) were asked. The former was measured with the question “How would you describe your English language skills?”, anchored to a scale with response categories 1 (‘No English knowledge’), 2 (‘Basic communication skills’), 3 (‘Good command’), 4 (‘Very good command’), 5 (‘Excellent command’), 6 (‘Near native’), 7 (‘Native speaker’). The latter was measured with the question “What is your level of English certificate, if any?”, anchored to a scale with response categories 1 (‘No English certificate’), 2 (‘A1 – Beginner’), 3 (‘A2 – Elementary’), 4 (‘B1 – Intermediate’), 5 (‘B2 – Upper Intermediate’), 6 (‘C1 – Advanced’), 7 (‘C2 – Mastery’). Furthermore, age and gender were included in the confounding analyses as basic demographic measures.

Sampling and Procedures

A non-random sampling method has been employed as participants were approached via social media and personal communication means. A total of 136 participants were recruited as they agreed to voluntarily join the experiment. Respondents were required to understand English and to be at least 18 years old in order to partake in the online experiment. Out of 136 participants, three were excluded as they had missing values on all the variables (probably due to an issue with the online platform the experiment was set up on), and four were removed as they failed an attention check. The final sample comprised 129 participants, 69 females and 60 males, whose age ranged from 18 to 54 years (M = 24.16, SD = 4.19). Almost half of the sample had a bachelor's degree (44.2 %) as the highest level of education, and 62% of the respondents were still studying in higher education. The large majority of the participants were Italian (67.4%), while The Netherlands was the second most represented country (8.5%).

The experiment was set up on Qualtrics. Participants were told that the purpose of the study was to evaluate news websites browsing experience and, in order to do so, respondents would have browsed and evaluated The Guardian's website. Then, they were randomly assigned to one of the four experimental conditions. In the first phase of the experiment, participants were asked to browse the Guardian's website. The news platform was embedded within Qualtrics in order to avoid participants to browse the website after this phase. In the second phase, implicit and explicit memory were assessed, followed by manipulation, control and demographic measures. Finally, participants were thanked and debriefed. Before the final experiment, a pilot study (N = 38) was conducted. No participant involved in the pre-tests and the pilot study was allowed to partake in the final experiment.

Results [2]

Manipulation and Confound Check

In order to check for possible confounding variables, a randomization check was conducted. ANOVA analyses for each control variable (except for gender) as dependent variable and the four conditions as between-subjects factor was conducted. Results showed that conditions did not

[2] The analyses of the present research have been conducted using different statistical packages. Data cleaning and descriptives analyses have been conducted using Python programming language, in order to manage textual data. Main analyses have been conducted in SPSS. Mediation analyses have been conducted in STATA, as it is able to execute bootstrapping mediation with dychotmous mediators and/or dependent variables.

significantly differ with respect to: web experience, F (3, 128) = 0.09, p = .961; news websites familiarity, F (3, 128) = .180, p = .910; The Guardian's website familiarity, F (3, 128) = 0.203, p = .894; self report English language skills, F (3, 128) = 0.268, p = .848; level of English language certificate, F (3, 128) = 0.781, p = .507; and age, F (3, 128) = 0.768, p = .514. Moreover, crosstabulations revealed that gender did not statistically vary across the four experimental conditions, χ^2 (3) = 0.72, p = .869. In order to test participants' verbal abilities, further analyses have been conducted. An ANOVA with distractor completion rate as dependent variable and the four experimental conditions as between-subject independent variable showed an insignificant effect, F (3, 128) = 0.10, p = .960, indicating no variance in respondents' word fragment completion abilities across the four experimental groups. Therefore, these analyses suggest that any differences between conditions can be confidently attributed to the experimental manipulation.

To see whether the manipulation of task-involvement was effective, an independent t-test was conducted to compare perceived task-involvement levels between low and high task-involvement conditions. On average, participants in the high task-involvement condition perceived their browsing task more involving (M = 0.03, SE = 0.20) than those in the low task-involvement condition (M = -0.95, SE = 1.33). This difference, -0.98, was significant, t (127) = -3.77, p < .001. Therefore, the result suggests that the manipulation was successful.

Moreover, the presence of a priming effect - as a pre-requisite of implicit memory to be formed (Shapiro & MacInnis, 1992), has been examined in both native and banner advertising conditions. Thus, two one-sample t-test with the difference score of target and distractor completion rates (priming effect) as dependent variable were conducted, in order to check whether priming effects were significantly greater than zero. Results showed significant priming effects for participants in both native advertising, t (62) = 5.90, p < .001, and banner conditions, t (65) = 3,51, 8p < .001, suggesting the presence of implicit memory.

Hypotheses Testing

Implicit Memory

In order to test H1a, H3a, and H4a - which respectively posit that native advertising results in greater implicit memory than banner advertising (H1a), that participants in the low task-involvement condition experience greater implicit memory of the advertisement than those in the high task-involvement condition (H3a), and that the effect of advertising format on implicit memory is moderated by task involvement (H4a), a multiple regression analysis was conducted. Advertising format (0 = Banner advertising, 1 = Native advertising), level of task involvement (0 = Low, 1 =

High), and their interaction term were chosen as predictors, while completion rates of the target words (0 = minimum, 6 = maximum) was selected as dependent variable. Prior to conducting the multiple regression, relevant assumptions were tested. Residual and scatter plots suggested that the assumptions of normality, linearity and homoscedasticity were all satisfied. The collinearity statistics were all within acceptable limits, *VIF* < 10, *Tolerances* > .1, therefore the assumption of multicollinearity was deemed to have been met.

Table 1. *Summary of the multiple regression model to predict advertisement implicit memory*

	b	***95% CI***	***β***	***t***	***p***
Constant	2.40	[1.78, 3.02]		7.67	$p < .001$
Advertising format	0.99	[0.14, 1.85]	0.27	2.30	$p = .023$
Task involvement	-0.87	[-1.71, -0.03]	-0.24	-2.06	$p = .042$
Format*Involvement	-0.32	[-1.52, 0.88]	-0.08	-0.53	$p = .596$

Note. $N = 129$; $R^2 = 0.14$, F (3, 128) = 6.93, $p < .001$.

The multiple regression (summarised in Table 1) revealed that the overall model significantly predicts participants' implicit memory, F (3, 128) = 6.93, $p < .001$, and was able to explain 14% of the total variance of the dependent variable ($R^2 = 0.14$) accounting for advertising format, level of task involvement, and their interaction term. In particular, participants in the native advertising condition resulted in significantly higher implicit memory of the advertisement than participants in the banner advertising condition: on average, 1 more target fragment word completed ($b = 0.99$, $\beta = 0.27$, t (128) = 2.30, *95% CI* [0.14, 1.85], $p = .023$). Therefore, H1a was accepted as far as exposure to native advertising produced greater advertisement implicit memory compared to exposure to banner advertising. Moreover, the analysis has showed that participants in the high task-involvement condition experienced less implicit memory than their counterparts in the low task-involvement condition: generally 0.87 fewer word fragments completed ($b = -0.87$, $\beta = -0.24$, t (128) = -2.06, *95% CI* [-1.71, -0.03], $p = .042$), providing support for H3a. In other words, the more participants were task-involved, the less they formed an implicit memory of the advertisement. Despite these two significant main effects, their interaction term did not significantly affect advertisement implicit memory ($b = -0.31$, $\beta = -0.08$, t (128) = -0.53, *95% CI* [-1.52, 0.88], $p = .596$). Consequently, H4a was not supported by the data.

Explicit Memory

For testing H1b, H3b, and H4b – which correspondingly state that native advertising results in greater explicit memory than banner advertising (H1b), that participants in the low task-

involvement condition experience greater explicit memory of the advertisement than those in the high task-involvement condition (H3b), and that the effect of advertising format on explicit memory is moderated by task involvement (H4b), two binary logistic regression analysis were conducted. Participants' aided and unaided recall (0 = Incorrect or no recall, 1 = Correct recall) was implemented as dependent variable, while advertising format (0 = Banner advertising, 1 = Native advertising), level of task involvement (0 = Low, 1 = High), and their interaction term were used as predictors. The predictors significantly increased the model's ability to predict whether subjects unaided (χ^2 (3) = 17.85, $p < .001$), and aided recalled (χ^2 (3) = 18.27, $p < .001$) the target brand. The models were able to correctly classify 76.7% and 76% of the cases, for unaided and aided brand recall respectively.

Table 2. *Summary of the binary logistic regression models to predict advertisement explicit memory*

	b	***SE (b)***	***p***	***OR***
Unaided Brand Recall				
Constant	-1.39	0.46	$p = .002$	0.25
Advertising format	1.45	0.57	$p = .012$	4.25
Task involvement	-0.69	0.70	$p = .322$	0.50
Format*Involvement	-1.24	0.95	$p = .191$	0.29
Aided Brand Recall				
Constant	-1.39	0.46	$p = .002$	0.25
Advertising format	1.69	0.58	$p = .003$	5.43
Task involvement	-0.22	0.64	$p = .727$	0.80
Format*Involvement	-1.69	0.88	$p = .054$	0.18

Note. N = 129. *For Unaided Brand recall, Nagelkerke-R^2 = .19, $\chi 2$ (3) = 17.85, p < .001; for Aided brand recall, Nagelkerke-R^2 = .19, $\chi 2$ (3) = 18.27, p < .001.*

Table 2 shows the logistic regression coefficient, significance level, and odds ratio for each of the predictors in relation to unaided and aided brand recall. The analysis outcomes show that only advertising format had a significant effect on explicit memory. The odds ratio for advertising format indicates that - holding all other variables constant, participants in the native advertising condition were 4.25 times more likely to unaided recall (b = 1.45, SE = 0.57, p = .012, OR = 4.25) and 5.43 times more likely to aided recall (b = 1.69, SE = 0.58, p = .003, OR = 5.43) the target brand, providing support for H1b. The other predictor, level of task involvement, resulted to be not significant for both unaided (b = -0.69, SE = 0.70, p = .322, OR = 0.50) and aided (b = -0.22, SE =

0.64, p = .727, OR = 0.80) recall. Therefore, the data do not suppert H3b, and thus the hypothesis was rejected. Moreover, similarly to the model predicting implicit memory, the interaction term falls short of significance with respect to both dependent variables (unaided: b = -1.24, SE = 0.95, p = .191, OR = 0.29; aided: b = -1.69, SE = 0.88, p = .054, OR = 0.18), thus H4b was not supported by the data.

Mediation

H2a and H2b state that the effect of advertising format on implicit (H2a) and explicit memory (H2b) is mediated by participants' attention towards the advertisement. In order to test these hypotheses, a bootstrapped mediation analysis has been conducted using advertising format (0 = Banner advertising, 1 = Native advertising), advertisement recognition (0 = Incorrect recognition, 1 = Correct recognition) as mediator, while implicit memory (0 = minimum, 6 = maximum), aided and unaided recall (0 = Incorrect or no recall, 1 = Correct recall) were selected as dependent variables. As the set of variables contains a combination of continuous and binary variables, the analyses have been conducted following the approach of MacKinnon and Dwyer (1993). Since logistic and OLS regression models generate coefficients on different, not comparable scales, they suggest standardizing coefficients (that is, multiply each coefficient by the standard deviation of the predictor variable and divide by the standard deviation of the outcome variable) before computing indirect effects. The results of the analyses based on this procedure are summarized in Table 3.

Table 3. *Summary of the bootstrapped mediation analysis between advertising format, attention towards the advertisement, and implicit and explicit memory.*

	b	***p***	***BCa 95% CI***
Implicit memory			
Indirect Effect	0.06	p = .036	[0.02, 0.14]
Direct Effect	0.19	p = .029	[0.02, 0.33]
Total Effect	0.24	p = .002	[0.08, 0.39]
Unaided Brand Recall			
Indirect Effect	0.10	p = .024	[0.04, 0.22]
Direct Effect	0.19	p = .084	[-0.02, 0.40]
Total Effect	0.27	p = .008	[0.07, 0.49]
Aided Brand Recall			
Indirect Effect	0.14	p = .005	[0.04, 0.24]
Direct Effect	0.15	p = .139	[-0.06, 0.36]
Total Effect	0.29	p = .006	[0.07, 0.50]

Note. N = 129. *Number of replications: 500.*

The analysis outcomes show how the effect of advertising format on memory was mediated by attention towards the advertisement. Indeed, as the indirect effects for each of the dependent variables were significant (p_{implicit} = .036, p_{unaided} = .024, p_{aided} = .005), H3a and H3b were accepted. In other words, participants in the native advertising condition experienced greater implicit and explicit memory compared to those in the traditional advertising condition as in-feed units were able to capture more attention than banner online advertisement.

Conclusion

Discussion and Implications

The main object of this study was twofold. First, the effects of different online advertising formats and different levels of task-involvement on implicit and explicit memory were examined. Second, the mediating role of attention in participants' processing of online advertising formats was investigated. The experiment led to several important findings with relevant implications for communication theory and marketers.

First, this study shows that native advertising prompts greater memory, both implicit and explicit, as it is able to catch more attention than banner advertisements do. These results are in line

with this study's expectations, and they suggest that native advertising is fulfilling its role as a format to counter consumers' avoidance of traditional forms of online advertising (Wojdynski, 2016). If marketers wish to make their ad campaigns more efficient in influencing consumer explicit and implicit memory, then they should consider these research findings and employ native advertising formats to achieve such a goal. Second, as the indirect effect of advertising format on implicit memory through attention was small-sized, online banner advertising may still be a viable option for having an effect on implicit memory (e.g., Yoo, 2008). Consequently, if implicit memory is the main goal of an advertisement campaign, marketers could still opt for traditional online advertising formats such as banners.

Unlike supposed, the level of task-involvement seems to affect only implicit memory, while there was no significant effect on users' explicit memory. These findings are in contrast with previous research, which has demonstrated the opposite: implicit memory remains stable between different levels of task-involvement, whereas explicit memory is strongly affected by them (e.g., Vandeberg, Wennekers, Murre & Smit, 2016). These contrasting results might be due to how the experiment was described to the participants. As it was presented as a test of news website's navigational experience, respondents' conscious processing could have been entirely directed towards website's features (e.g., layout or loading speed of pages) in both task-involvement conditions (thus generating no effect on explicit memory). In contrast, given that the manipulation check was successfull, it can be argued that participants unconsciously processed the advertisements in a different manner between the two task-involvement conditions (thus having a significant effect on implicit memory). In other words, the experimental manipulation might have been effective in driving participants' unconscious cognitive resources allocation, while could have failed in manipulating their conscious allocation.

Finally, the present study investigates the interaction between advertising format and task-involvement on implicit and explicit memory. In contrast with the hypotheses, the results show no significant interaction term. It means that advertising format and level of task-involvement are unrelated factors that do not affect concurrently how consumers react to online advertising. However, further research is needed to support this claim.

Limitations and Future Research

While this experiment provides useful insight on memory reactions for different advertising format, limitations should be addressed. First, as this study employed a real, clickable website, it was fairly complicated to control for duration and number of advertisement exposures. In order to

balance these issues, the target advertisements were presented on the homepage only, immediately after the ‘Headlines’ section (that is, the top part of the website). It was assumed that every respondent had a high chance, although not equal to 100%, to have at least one exposure to the advertisement. Specifically, participants in the low task-involvement condition were very likely to scroll down on the homepage, while participants in the high task-involvement condition were expected to do so, since the instructions led them to an article positioned immediately after the target advertisements. Future research could try to extend the internal validity of this experiment’s results by trying to control for duration and number of exposures. Moreover, behavioural measures such as click-through rates may be implemented in the attempt to provide a clearer, broader portrait of online advertising format effectiveness.

Second, this study does not address a methodological bias related to indirect memory tests. As Jacoby (1991) pointed out, both conscious and unconscious processing affect the performance of such assessments. In other words, both participants’ explicit memory and implicit memory contribute to their overall score in indirect tests of memory such as word-fragment completion tasks. In order to overcome this issue, Jacoby (1991) developed the *Process Dissociation Procedure*, which has been successfully employed to separate the contribution of implicit and explicit memory in word-fragment tests performances (Yoo, 2008). Future research could implement this procedure and, furthermore, analyse what specific elements of native and banner advertisements (for instance, verbal claims or brand names) rely more on explicit memory than implicit memory retrievals.

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Appendix A

List of product categories employed in the pre-test (average number of brands named in parentheses)

Cars (4.78)

Soft drinks (4.50)

Personal care (4.39)

Telecommunication providers (4.35)

Luxury (4.35)

Food (4.28)

Alcoholic drinks (4.28)

Technology (4.25)

Banks (4.18)

Media and Entertainment (4.14)

Apparel (4.07)

Retail (3.78)

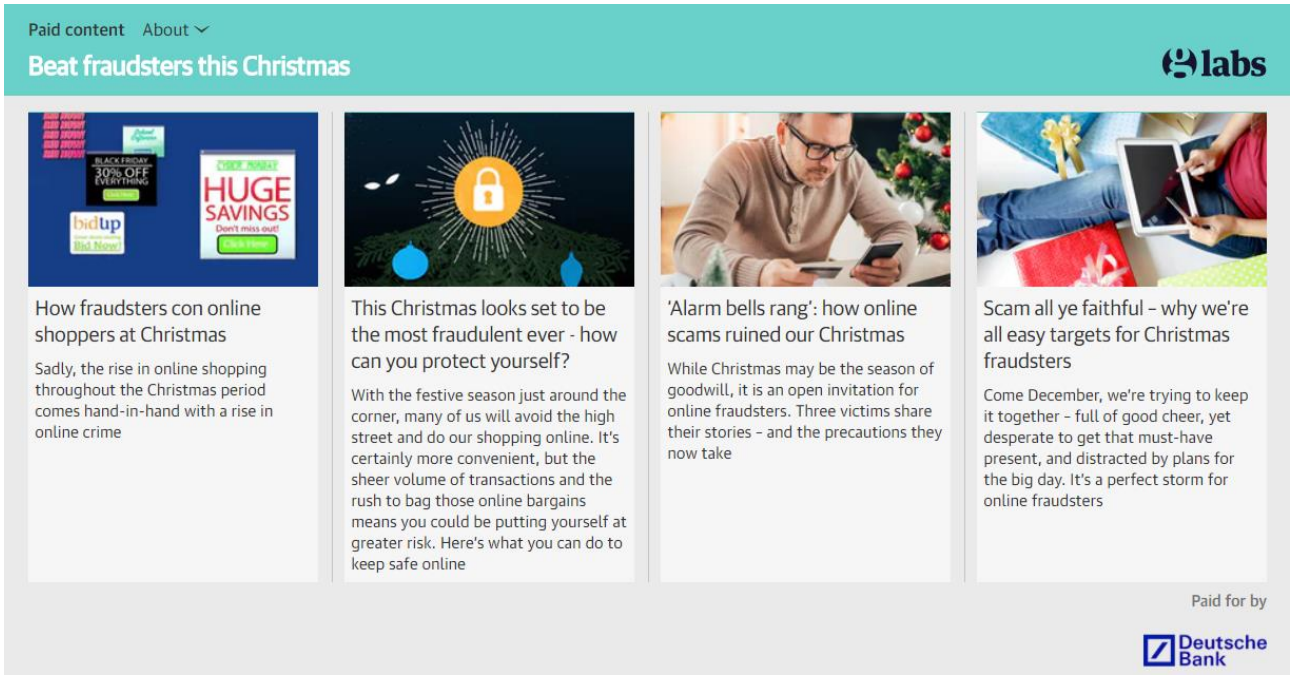
Fast food (3.75)

Oil and Gas (3.67)

Appendix B

Advertising stimuli

In-Feed Unit



Banner Advertisement

Appendix C

Word fragments pre-test results (words selected for the experiment are underlined)

Target			Distractor		
Word	**Stem**	**Completion Rate**	**Word**	**Stem**	**Completion Rate**
Protection	P _ O _ E C _ _ O N	50%	Name	N _ M _	57%
Gift	G _ F _	43%	University	U _ _ V _ _ S _ T _	52%
Shopping	S _ O _ P _ N G	43%	Arrival	A _ R _ V A _	45%
Fraud	F _ A U _	40%	Using	U S _ _ G	45%
Internet	I N _ _ R _ _ E T	38%	Permanent	P E _ M _ N _ _ T	45%
Christmas	C H _ _ _ T _ A S	36%	Fifty	F _ F _ Y	43%
Victim	V _ C _ _ M	33%	**Collect**	C _ L _ _ C _	43%
Safety	S _ F _ _ Y	29%	**Rock**	R _ _ K	38%
Phishing	P _ _ S H _ N G	29%	**Extraction**	E _ T _ A _ _ I _ N	33%
Online	O N _ _ _ E	24%	**Viewing**	V _ _ W _ N _	19%
Security	S E _ _ R _ Y	21%	**Pack**	P _ C _	17%
Exploit	E X _ L _ I T	19%	**Potato**	P _ _ A T _	17%
Data	D _ T _	19%	Daughter	D _ U _ _ T _ R	10%
Transaction	T _ _ N S _ _ T _ O N	17%	Brother	B _ _ T _ E R	7%
Scam	_ C _ M	17%	Bench	B E _ _ H	7%
Precaution	P R _ _ A _ T _ _ N	10%	Swearing	S W _ _ _ I _ G	5%
Germany	G _ _ M _ N _	10%	Walk	W _ L _	2%
Bank	B _ N _	10%	Camp	C _ _ P	2%