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A CROSS-CULTURAL STUDY OF INTRUSIVENESS AND FLUENCY EFFECTS OF WEB ADS

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Abstract

Advertising online has increasingly become an important marketing strategy. Along with the rising ad dollars invested on the web, marketers have also devised more powerful ad delivery tactics to garner online consumers' attention. These powerful online advertising tactics may result in intrusiveness perceptions and processing fluency effects. As Westerners tend to focus on the focal object whereas East Asians tend to pay attention to the focal object and contextual background simultaneously when processing a visual scene, East Asians' and Westerners' culturally divergent visual processing styles would lead them to develop varying intrusiveness perceptions and experience differential processing fluency when exposed to web ads. Specifically, we propose that when a web ad's visibility increases, Westerners will perceive it to be more intrusive than East Asians and East Asians will be more likely to experience perceptual and conceptual fluency to choose a product that is perceptually related to the web ad than Westerners. Designs of the experiment testing the propositions are discussed.

Keywords: web advertisement, online advertising, intrusiveness, perceptual fluency, conceptual fluency, cross-cultural study, holistic cognition, analytic cognition.

1 INTRODUCTION

Advertising online has increasingly become an important marketing strategy. In 2012, digital advertising revenues climbed to a milestone high of \$36.6 billion (PriceWaterhouseCooper 2013). Meanwhile, because consumers tend to actively avoid and neglect web ads (Drèze & Hussherr 2003), along with the rising ad dollars invested on the web, marketers have also devised more powerful ad delivery tactics to garner online consumers' attention. Goldfarb and Tucker (2011) identify two prominent tactics. First, marketers deliver web ads by including many visual and audio features that make ads more obtrusive and harder to ignore. Second, marketers attempt to increase ad salience through selective ad deployment. Based on real-time analysis of consumers' shopping behaviors, marketers can customize the ads to contextually match consumers' primary shopping tasks (Moe 2013). These powerful online advertising tactics not only enhance consumers' attention to web ads as expected, but also affect their processing of primary shopping tasks.

First, online advertising literature suggests that, when displayed in a highly visible fashion, web ads can distract consumers' attention away from their primary goals such as online product evaluation and shopping (Edwards et al. 2002). Such interruptions and interferences will produce intrusiveness perceptions, leading consumers to form negative attitudes and develop reactance toward the web ad and the advertised product (Li et al. 2002). For instance, Edwards et al. (2002) document that, compared with static ads, pop-up web ads elicit higher perceived intrusiveness, especially when consumers are cognitively focusing on their primary browsing and searching tasks. Second, studies have shown that contextually targeting web ads can lead consumers to experience perceptual or conceptual fluency when processing the primary tasks such that the products that are either perceptually or conceptually connected to the web ads will be evaluated more favorably and chosen with a higher likelihood (Wang & Teo 2012). For instance, Wang and Teo (2012) demonstrate how perceptual and conceptual fluency affected experiment participants' product choices when they were exposed to a web ad containing a primary color scheme (e.g., red) as well as a web ad advertising an insurance company. They have observed that when exposed to the web ad containing a particular color stimulus (e.g., red), participants were more likely to choose that color as their preferred T-shirt color and when exposed to the insurance web ad, participants were more likely to choose a product related to the security concept (the hotel offering the luggage lock to its guests as a check-in gift).

The fundamental mechanism underlying the effects of web ads on consumer intrusiveness perceptions and processing fluency is that online shoppers' visual attention is attracted by the ads. On one hand, such accidental shifts of visual attention from primary shopping tasks to web ads may lead online shoppers to perceive visual resource competition from the ads, therefore heightening intrusiveness perceptions. On the other hand, accidental glimpses of web ads leave memory traces of the stimuli embedded in the ads or activate certain concepts related to those contained in the ads, leading consumers to experience perceptual or conceptual fluency when shopping online. To the extent that one's visual attention allocation plays a key role in eliciting intrusiveness perceptions and producing processing fluency effects, when individuals' patterns of visual processing of environment stimuli vary, their intrusiveness perceptions and processing fluency experiences may differ.

Cross-cultural research has accumulated extensive evidence showing that Westerners and East Asians often exhibit marked perceptual and behavioural differences (Goldstein & Blackman 1978; Markus & Kitayama 1991; Miyamoto et al. 2005; Nisbett 2003; Nisbett et al. 2001). These differences are believed to stem from their distinct cognitive styles - analytic for Westerners and holistic for East Asians - that are shaped by their respective cultural values and social practices over time (Markus & Kitayama 1991; Nisbett 2003; Nisbett et al. 2001). One prominent difference in their cognitive styles is related to visual processing - Westerners tend to focus on the focal object whereas East Asians tend to pay attention to the focal object and contextual background simultaneously when processing a visual scene. In this study, drawing on the theories of cultural cognitive styles, we propose that East Asians and Westerners culturally divergent visual processing styles would lead them to develop

varying intrusiveness perceptions and experience differential processing fluency when exposed to web ads.

2 THEORETICAL BACKGROUND AND HYPOTHESES

2.1 Holistic versus Analytic Cognition

A growing literature suggests that various cognitive and behavioral variations between people from different cultures arise from their distinct cognitive processing styles (Nisbett et al. 2001). Two prominent cognitive styles are holistic, often found in East Asians, and analytic, often observed in Westerners, in particular North Americans. The difference in cognitive styles between East Asians and Americans is believed to stem from their social structure differences (Cromer 1993; Witkin & Berry 1975). East Asian society such as China's has been based on agricultural economies in which cooperation is crucial and hierarchical political organization requires obedience. The social environment is highly complex and constraining, and attention to social intricacy is essential for effective action. In contrast, European economies have been based on hunting and herding, which requires a relatively loose social structure but emphasizes on autonomous individual functioning.

The two distinct cognitive styles lead East Asians and Westerners to exhibit fundamentally different visual processing of contextual stimuli. Holistic East Asians' attention tends to be oriented toward the relationship between objects and the field to which those objects belong. In contrast, analytic Westerners tend to pay attention primarily to foreground objects to the exclusion of the field at large (Ji et al. 2000; Masuda & Nisbett 2001; Nisbett & Miyamoto 2005). Consequently, East Asians are more field dependent than are Westerners (Witkin et al. 1974) in that East Asians find it more difficult to separate an object from the field in which it is embedded than do Westerners. For example, Masuda and Nisbett (2001) presented animated scenes of fish and other underwater life to American and Japanese participants and later asked them to report what they had seen. Although Americans and Japanese were equally likely to refer to the focal fish, Japanese participants were more likely to begin by setting the scene ("There was a lake or pond" or "The bottom was rocky"). Japanese participants were also more likely to refer to relationships between the focal fish and aspects of the environment ("The big fish swam past the gray seaweed"). Overall, Japanese participants made 70% more statements about background features than Americans, and twice as many statements about relationships between objects. Similarly, when asked to compare two flickering images, Americans detected more changes in focal objects, while the Japanese detected more changes in the scene background (Masuda & Nisbett 2006). Studies monitoring eye movements additionally demonstrate that Americans concentrate on focal objects sooner and longer than East Asians, whereas East Asians make more saccades to the background than Americans (Chua et al. 2005).

2.2 Intrusiveness of Web Ads

Focusing on traditional print media, Ha (1996) has defined ad intrusiveness as "the degree to which advertisements in a media vehicle interrupt the flow of an editorial unit" (p. 77). Li et al. (2002) expand the concept by redefining "editorial unit" as "all new environments" in which ads appear and particularly examine intrusiveness perceptions elicited by web ads. There are two important findings in the research on web ads (Edwards et al. 2002; Li et al. 2002). First, web ads high in visibility (e.g., pop-ups) will result in severe interruptions to consumers' primary shopping experience and therefore elicit relatively high intrusiveness perceptions. Second, intrusiveness perceptions would be more pronounced for consumers who are concentrated on their primary shopping tasks.

We posit that East Asians and Westerners would not exhibit significantly different intrusiveness perceptions when a web ad's visibility is low because they both can easily ignore the ad and experience little interruption. However, when a web ad's visibility increases, East Asians' and Westerners' differential visual processing styles would lead them to develop varying intrusiveness perceptions. Web ads of high visibility that are hard to ignore (Goldfarb & Tucker 2011) compete for

visual resources from online consumers. As East Asians tend to be able to attend to a wider contextual range and visually process more objects together, they can switch their visual attention back and forth between the focal product information related to their primary shopping tasks and visual stimuli embedded in the web ad more easily than Westerners. They therefore may not perceive the visual resource competition pressure from the web ad and feel their primary shopping experience to be interrupted even though they may allocate more visual resources to the web ad. On the other hand, Westerners may perceive the web ad of high visibility to be irritating and distracting because these ads compete for their visual attention when they are trying to focus on the focal information related to the primary shopping tasks.

H1: When a web ad's visibility increases, Westerners will perceive it to be more intrusive than East Asians.

2.3 Perceptual and Conceptual Fluency Effects of Web Ads

Individuals' cognition and behavior are often not only affected by the information they have, but also by how easy it is for them to process the information. The ease of cognitive processing is referred to information processing fluency (Lee & Labroo 2004; Tversky & Kahneman 1973). The "feeling as information" proposition offers an explanation of the effects of information processing fluency (Schwarz 2004). It contends that how easy the individual can process the information of a target will produce feelings that are, together with the information itself, incorporated into judgment formulation and decision making pertinent to the target. As ease of processing often carries a positive valence, processing fluency can lead to a more favorable target evaluation and a greater probability of target choice.

The theory of context effects posits that various stimuli embedded in an individual's context can give rise to processing fluency (Bargh & Chartrand 2000; Shapiro 1999). Contextual stimuli, although are not directly related to the individual's primary task and not the object of attention, can leave memory traces and activate certain schema and concepts. When the individual processes product information, product features and concepts related to those stimuli will be more accessible, resulting in processing fluency (Berger & Fitzsimons 2008; Zhu & Meyers-Levy 2009). The effects of contextual stimuli on processing fluency can occur at both perceptual and conceptual levels.

Perceptual fluency occurs when an individual's past exposure to environmental stimuli leads to the ease with which the individual processes the product's physical features (e.g., shape, brightness, color) related to those stimuli (Shapiro 1999). For instance, Berger and Fitzsimons (2008) document that, in their experiment, the color of the pen that participants used for answering survey questions led them to choose more products of that same color. Specifically, participants who used a green (orange) pen chose more products that were associated with green (orange) such as Lemon-Lime Gatorade (Sunkist orange soda).

Conceptual fluency occurs when an individual's prior exposure to environmental stimuli activates certain concepts. Through a complex associative network, the activation can spread to related concepts (Anderson 1983; Collins & Loftus 1975; Rumelhart & McClelland 1982), leading them to be processed fluently in other contexts (Hamann 1990; Labroo & Lee 2006; Shapiro 1999). Empirically, taking advantage of the strong cognitive association between dogs and cats, Berger and Fitzsimons (2008) demonstrate that subjects who had been exposed to dog pictures evaluated Puma sneakers more favorably than those who had not.

The occurrence of processing fluency requires adequate exposure to contextual stimuli. Frequent exposures can repeatedly prime perceptual features and conceptual constructs contained in the stimuli, leading them to be more accessible when the individual processes the focal task. Thus an increased frequency of exposure to contextual stimuli can strengthen perceptual and conceptual fluency (Berger & Fitzsimons 2008).

Shopping online involves extensive information processing in a complex information environment. Consumers not only need to focus on product information such as descriptions, price, and reviews, but are also exposed to peripherally displayed ads that could function as various contextual stimuli. An accidental and brief glimpse of these contextual stimuli may leave memory traces or activate related concepts. If the product under evaluation contains physical features or relates to concepts that somehow link to the stimuli depicted in the web ads, perceptual or conceptual fluency effects would occur. For instance, individuals can be affected by the color stimulus contained in the web ad when choosing a color for their T-shirts, which shows the operation of the perceptual fluency effect (Wang & Teo 2012). Further, participants who are exposed to the insurance web ad are more likely to choose the hotel offering a luggage lock as a gift to its guests as the insurance stimulus could activate the concept of security (Wang & Teo 2012).

We propose that East Asians' and Westerners' distinct visual processing styles would lead them to experience differential perceptual and conceptual fluency effects with the increase of web ads' visibility. When displayed in a static mode with low visibility, web ads could not attract much visual attention from online consumers. Although East Asians tend to visually cover a wider area and collect more visual stimuli than Westerners (Boduroglu et al. 2009), the static presentation mode may not expose them to the perceptual and conceptual stimuli embedded in the web ad adequately. Consequently, neither East Asians' nor Westerners' memory traces and conceptual activation resulting from accidental exposure to the web ad are salient enough to entail perceptual and conceptual fluency effects. However, when web ads are presented in a highly visible mode, East Asians' and Westerners' reactions would diverge. East Asians' attention to contextual stimuli coupled with high visibility of the web ad may increase the frequency of exposure to the stimuli in the web ad to a level that is necessary for the occurrence of perceptual and conceptual fluency. In contrast, Westerners' tendency to focus on the focal object may successfully enable them to ignore the web ad, leading them to be less likely affected by the stimuli embedded in the web ad.

H2a: When a web ad's visibility increases, East Asians will be more likely to experience perceptual fluency to choose a product that is perceptually related to the web ad than Westerners.

H2b: When a web ad's visibility increases, East Asians will be more likely to experience conceptual fluency to choose a product that is conceptually related to the web ad than Westerners.

3 EXPERIMENT DESIGN

We will empirically test our proposition that the web ad will lead to differential intrusiveness perceptions and processing fluency effects on East Asians and Westerners through experiments. We will construct online shopping environments and manipulate visibility of the ad and the perceptual and conceptual links between the web ad and the online products.

The experiment testing our hypotheses is underway. We have created a hotel booking website for the study. The participants will be told that they are going on an overseas trip and need to book a hotel on the website. There are four hotel packages that satisfy their basic criteria like price, location, and so on. The hotels will be presented in a random order. The participants will be asked to book one that they prefer the most. The hotel packages are designed to have comparable prices, facilities and amenities but with different promotional offers. Two offers are manipulated as either perceptual or conceptual link to the web ads and the other two are fillers. The offer that has a perceptual link to the web ad provides guests 1-day tourist pass. The offer that has a conceptual link to the web ad provides a complimentary spa treatment for guests during their stay at the hotel. For the corresponding web ads,

one advertises a tourist pass and the other advertises a yoga program¹. The two web ads are displayed in either a static or flash mode, representing the low vs. high visibility conditions.

In total, there were four treatments (presentation mode: static vs. flash; ads: perceptual – tourist pass vs. conceptual – insurance) (see Figure 1a-d for experimental manipulations).

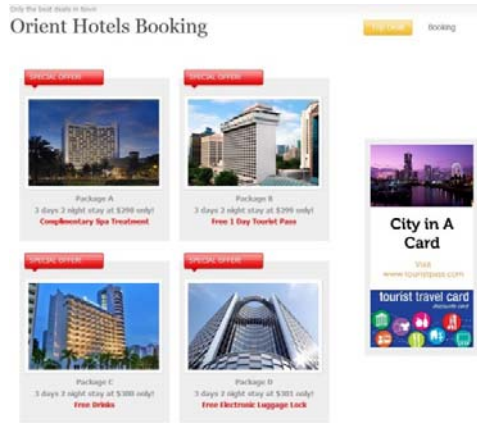


Figure 1a. Hotel Booking Site with Tourist Pass Ad

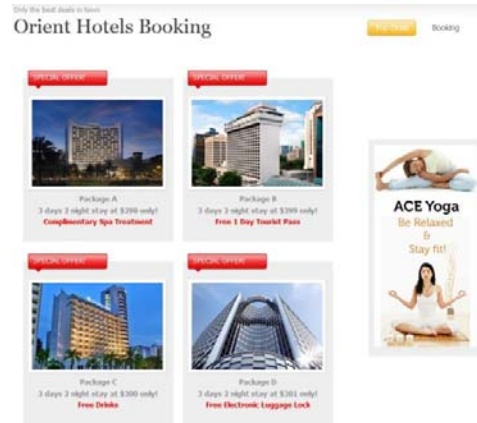


Figure 1b. Hotel Booking Site with Yoga Ad



Figure 1c. Webpage of Package with Tourist Pass Offer

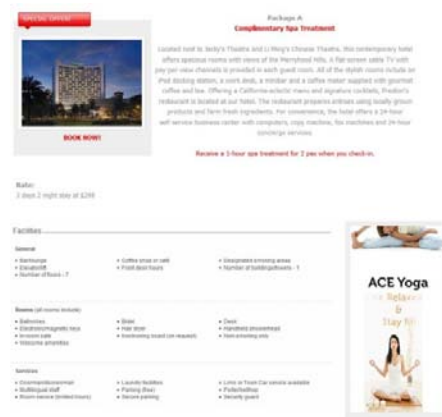


Figure 1d. Webpage of Package with Spa Offer

We will recruit East Asian and Western subjects. They will be asked to book a hotel on the experimental website. We will examine their intrusiveness perceptions and product choices to test

¹ We expect that the yoga ad and the spa treatment are conceptually connected through concepts such as “relaxation”, “fitness”, and “body”. The accessibility of these concepts through the priming of the web ad would result in conceptual fluency, leading subjects to choose the hotel with the spa offer when they are exposed to the yoga ad. We have performed a pretest to ascertain this. 26 participants were recruited for two ostensibly unrelated studies. The first study asked subjects to proofread a short article about spa and another product (i.e., lock) to manipulate their exposure to the concept of spa. In the second study, all subjects engaged in a word-fragment completion test to examine conceptual fluency. There were 12 words, including 8 distractor words and 4 target words (e.g., body, relax, fitness, etc.). The pretest showed that subjects’ completion rates for the target words were significantly higher for subjects who had proofread the spa article than those who had proofread the other one ($F=8.79, p<0.01$) and thus validated the conceptual connections between the web ad and the product feature.

whether their distinct visual processing styles lead them to exhibit differential intrusiveness perceptions and experience varying processing fluency.

4 CONCLUSION

Online shopping contexts are becoming increasingly complex with marketers wide use of the Internet as an important advertising platform. We suggest that because of East Asians' and Westerners' differential visual processing patterns, their perceptions and experiences in such complex information environments would differ. Specifically, Eastern Asians would perceive lower intrusiveness and experience heightened processing fluency than Westerners.

The research makes a number of potential theoretical contributions. First, it extends prior studies on intrusiveness and processing fluency effects of online advertising from a cross-cultural perspective. Second, we also contribute to the literature of cognitive styles. With the deep penetration of IT into almost every aspect of human social lives, our research shows the IT-constructed environment could be an area worth exploring for fruitful research endeavors to further increase the theoretical utility of the theories of cognitive styles.

The findings of this study will have significant practical implications. Globalization has driven many organizations to develop an international presence on the web by creating different websites for users all over the world. How to advertise on these websites so that both marketers and e-commerce practitioners can benefit from the advertisement and at the same time consumers will not be irritated is an important practical question. The study can shed significant light on how to adapt web ad deployment tactics to fit consumers' different visual processing styles with different cultural backgrounds. According to our propositions, marketers can display more ads and increase these ads' visibility when the target users are East Asians. However, if the target users are Westerners, marketers need to refrain from deploying web ads in an intrusive way.

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