Inattentional Learning of Brand Associations

Mathew Chylinski, University of New South Wales, m.chylinski@unsw.edu.au
William Lau, University of New South Wales, z316048@unsw.edu.au

Abstract

Learning of brand images occurs without the need for directed attention. In a longitudinal experiment, we investigate the formation and activation of brand associations in situations where the consumers' attention is diverted away from the marketing message. Findings indicate that inattentional stimuli succeed in forming specific brand associations, whereby consumers are able to comprehend the inherent positioning of multiple brands. That is, consumers learn a brand may be a low or high end brand, with either a utilitarian or hedonic benefit, but shortly after they do not recall the marketing stimuli used to establish that positioning.

Keywords: Brand image, inattentional learning, non-conscious information processing

Inattentional Learning of Brand Associations

Introduction

Consumers nowadays lead busy lives, multiple objectives occupy much of their daily attention, while at the same time, increasing numbers of companies, products and brands are vying for their limited attention in various forms of communication. In many contexts, consumers' attention is fragmented and diverted away from the marketing communications by multi-tasking. For instance, a person may be watching television while concurrently doing house chores, browsing the internet on their laptop, or solving a crossword puzzle in a newspaper. The attention given to the television program and advertisements are thus reduced significantly. Such situations are commonplace in today's reality, yet brand learning under conditions of inattention is not fully understood. To date, the marketing literature has focused primarily on analyzing salient stimuli and how these stimuli influence brand equity (Keller 2003). However, in the noisy contexts where consumers' attention is fragmented, many firms inevitably end up investing in marketing communications that in part or in whole are not attended to directly. In this study, we investigate inatentional stimuli, and the extent to which brand information is processed without the necessary focal attention from the consumer.

Inattentional stimuli refer to instances where consumer's focus of attention is on a particular task while information is presented unexpectedly or in the periphery (Simons, 2000). General findings in this area show that the focal attention goes to the immediate task, and processing of the periphery information is degraded; yet it is not eliminated completely. That is, people tend to monitor the periphery without either being aware of it, or without being able to state that they are aware of it (Mack & Rock, 1998; Simons, 2000). In experiments which demonstrate this effect, the subjects' attention is delibretly focused on a particular task, while stimuli are unexpectedly presented outside of focal attention. Upon subsequent questioning about these stimuli, subjects have difficulty reporting details about them, despite these stimuli having measurable effects on their behaviour (Reddy et al, 2004).

Specifically, we highlight the relationship between inattentiveness and the formation and activation of brand associations. Using a longitudinal experiment we test a set of hypotheses based on the dual-task paradigm; where the consumer engages in an unrelated task that captures his or her attention (as in above example) while marketing messages are presented in the periphery. Our findings broadly point to the ability of inattentional stimuli to generate multiple and distinct brand images in the consumer's mind, even though consumers may not recall having seen these stimuli. We briefly discuss the implications for theory and practice.

Background

Cognitive antecedents of brand equity have been investigated before (Johnson & Russo, 1984; Zaltman & Coulter, 1995; Aaker, 1997), but rarely has it been done in relation to inattentional learning. Majority of the research in this area focuses heavily on the effects of using conscious or attentional stimuli in marketing communications. However, recent findings in consumer psychology (Menon & Raghubir, 2003; Custers & Aarts, 2005) indicate the possibility that memory associations may form without the consumer's awareness, thereby influencing behaviour without his or her knowledge (e.g. Russo, Meloy & Medvec, 1999). For example, a study conducted by Mack and Rock (1998) shows that gist, or central concepts, are immune from a phenomenon termed inattentional blindness. When a photograph was briefly and unexpectedly flashed onto a screen, subjects were able to accurately report a summary of the photograph. Hence, while top-down attention is necessary for proper focal attention, a brief overview involving peripheral vision appears to be sufficient to comprehend the gist of an image. Similarly, in dual-task settings, the subject's attention is drawn to an attentionally-demanding central task, known as a distractor task. At the same time, a secondary stimulus is presented in the periphery (Sperling & Dosher, 1986; Braun & Julesz, 1998). With focal attention busy at the centre, subjects were able to distinguish between male and female faces presented in the periphery, or even between famous and non-famous faces (Reddy et al, 2004, 2006). Thus, it seems that subjects are able to perform rudimentary discriminations in the near absence of top-down attention.

Related studies involving attentional biases suggest that the effects observed were not only influenced by the attention to the focal stimuli, but also by different types of stimuli in the periphery (Mogg & Bradley, 1999; Mogg et al. 1993; Bradley, 2004). For instance, when considering the relevance of information in relation to inattentional effects, Custers and Aarts (2005) suggest that behavioural and affective states influenced the emergence of inattentional goal pursuit at different rates. This is in line with prior research on auto-motive effects by Chartrand & Bargh (1999) who showed that consumer decision-making may be influenced by non-conscious processes dependent on the type of information presented. Mischel and Shoda (1995) revealed that individuals differ in how they selectively focus on different features of situations, thereby leading to different methods of categorising and encoding these situations both in a cognitive and in an emotional manner. Kunst-Wilson and Zajonc (1980) found that with minimal stimulus information affective discriminations were significantly higher than cognition in terms of accuracy. In another study Bosmans and Baumgartner (2005) found that the cognitive and affective encoding of information differed at varying levels of awareness and automaticity. Broadly, these findings imply different efficacy of inattentional information processing depending on the type of peripheral stimulus; generally classified as either cognitive or affective.

In addition to rudimentary processing of different types of inattentional stimuli, activation of existing associations may occur without attention. "Priming" or situational activation of attitudes and behaviours is well established in social psychology (e.g.: Fazio et al. 1986; Fitzimons 2008). For example, automatic goal activation and pursuit is often triggered non-consciously (Chatrand et al. 2008). Consistent with the non-conscious priming paradigm, choice behaviour has also been shown to respond to subliminal primes (Zenna 2001; Winkielman et al 2005). Interestingly, other response modes, such as recognition appear to further moderate subjects ability to respond to non-conscious primes (Whittlesea & Price, 2001). Hence, inattentional priming may in addition provide different results based on choice and recognition tasks.

Conceptual Model

Building on the recent research in psychology, we postulate that learning of brand associations may occur outside of attentional awareness. We distinguish this proposition from the mere exposure effect (Janiszewski, 1993), by focusing on the set of complex brand positionings in situations of divergent attention; that is, when consumer's attention is specifically distracted by competing tasks. This emulates a realistic scenario (suggested in the introduction) where the consumer is presented with marketing information designed to convey specific positioning for multiple/competing brands, but does not pay direct attention to that information. Rather than investigating resulting brand preferences, we focus on learning of brand meaning. That is, we trace the development of brand associations, which a consumer learns over time based on repeated exposure to multiple marketing stimuli outside of his or her attention. These associations link with a distinct brand logo in consumer's memory to create specific primes that later are used to activate the learned sets of associations. The activation scenario may approximate a point of purchase encounter with a brand, where consumer's attention is distracted. Since, inattentional learning appears to be affected by a number of interacting variables we summarise these in figure 1.

Figure 1. Conceptual Model

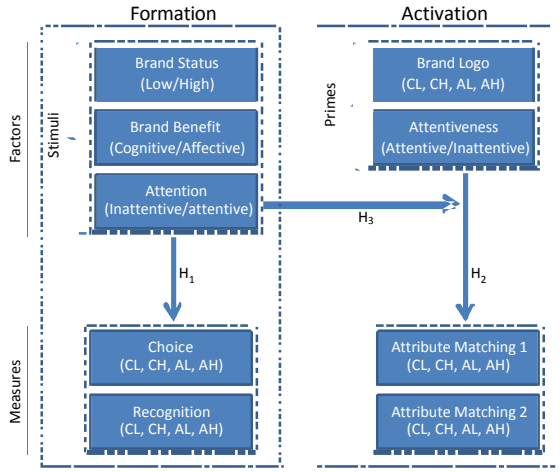

Table 1. Cross-sectional design

	BLOCK 1:	*BREAK*	BLOCK 2:	
	FORMATION		ACTIVATION	
Condition	Factors		Inattentional	Attentional
1	Attentional (CL,CH,AL,AH)		(CH)	(AL)
2	Attentional (CL,CH,AL,AH)		(CL)	(AH)
3	Attentional (CL,CH,AL,AH)		(AH)	(CL)
4	Attentional (CL,CH,AL,AH)		(AL)	(CH)
5	Inattentional (CL,CH,AL,AH)		(CH)	(AL)
6	Inattentional (CL,CH,AL,AH)		(CL)	(AH)
7	Inattentional (CL,CH,AL,AH)		(AH)	(CL)
8	Inattentional (CL,CH,AL,AH)		(AL)	(CH)

The variables in figure 1 allow different brand positions. Brand positions can broadly be distinguished according to 'brand status', whether a brand is a low or a high end brand; and 'brand benefit', which we dichotomise as either utilitarian (cognitive) or hedonic (affective). This provides four basic brand positions: low status utilitarian (CL), high status utilitarian (CH), low status hedonic (AL), and high status hedonic (AH). We identify each brand with a distinct logo, and communicate the brand's position by providing consumers with multiple images representing each brand's users, usage situations, and purchase settings. We compare learning of the each brand position between situations of low (distracted) and high (focused) attention towards these images. During the comparison, we distinguish between choice and recognition of the brand in order to control for potential response mode effects. Finally, we use the brand logos as primes, to see if we can activate specific brand associations in situations of low versus high attention towards specific brand logo. The assumption is that priming the specific brand logo will affect the brand attributes consumers think of, and consumers will be able to match these with the list of attributes presented to them.

Based on this setting we propose a set of hypotheses that formalize the relations between the variables in figure 1. Using the high attention condition as baseline, in relation to inattentional effects we propose that:

H_1 *[Formation]: The use of inattentional stimuli leads to the formation of distinct brand image associations.*
H_2 *[Activation]: The use of inattentional primes leads to the activation of specific brand image associations.*
H_3 *[Interaction]: The effect of inattentional primes interacts with the mode of brand image formation (inattentional/attentional).*

Method

To test the effects hypothesized in Figure 1, we used a two block (formation, activation) design with eight conditions (see table 1); brand status (low[L]/high[H]) x brand benefit (utilitarian[C]/hedonic[A]) x attention (attentive/inattentive). In the first block of treatments, conditions 1 to 4 involved attentional formation while conditions 5 to 8 comprise inattentional formation of brand associations. In the second block of treatments, subjects undergo both inattentional and attentional activation of some of the previously learned associations.

Block 1 (Formation)

Stimuli. In Block 1, the stimuli comprised a slideshow of images, each of which resembled an advertisement for bottled water including a picture of the product in the left corner and a short slogan at the bottom. The images conveyed brand's users (6 images), usage (6 images), and purchase situations (6 images). Thus, each subject saw a set of 18 randomized images for each of the four brands; in total 72 images. In the inattentional conditions a distractor task was also used (based on the "dual-task" paradigm Braun & Julesz, 1998) to divert the subject's attention from each image. We used four kinds of distractor tasks applied randomly within subjects to prevent fatigue or maturation towards any one distractor. These involved i) number addition; ii) letter matching, iii) animal identification, and iv) gender identification.

Measures. At the end of the slide show, subjects were asked to identify the positioning for each brand using a 'Projective Choice' scenario (a story about a hypothetical target consumer), and a related 'Recognition' task (four images, each suggesting one of the four brand positions). Subjects then matched each brand with the best position. Each measure was repeated three times for each brand creating a repeated measures design.

Block 2 (Activation)

Stimuli. A ten minute break was applied in-between Blocks 1 and 2 to simulate short-memory degradation, where subjects answered standard demographic questions and viewed a short, unrelated video clip. During Block 2, subjects were primed with *one* of the four brand logos while doing a set of distractor tasks described above.

Measures. They were then given 30 seconds to imagine a bottle of water and any corresponding attributes that might be associated with it. A list of six attributes were presented to each subject (3 correct; and 3 decoys), who choose one attribute out of the six that best related to their mental image. This measure was repeated eight times. Once finished, subjects were primed with a different brand logo *without* the distractor task, and asked to complete another eight attribute matching tasks. The brand logos were counterbalanced between conditions (see table 1). In the final phase of the experiment subjects were presented with a random selection of images used during the formation phase (block 1), mixed in with an equal number of decoy images, and asked to indicate which of the images they have seen during the learning phase in block 1 of the experiment.

Results and Discussion

Pretests and Manipulation Checks. We pretested the distrator tasks with eight representative respondents using the SR Research Eyelink Eye-Tracker. The results showed clear differences in focus away from the background and periphery images indicating a successful manipulation of stimuli and distractor tasks. We also pretested the stimuli and all measures in three focus groups. The results led to a select group of stimuli and measures that clearly distinguished the relevant positioning and benefits for each brand.

Main Study. 224 University students (28 per condition) participated in the main study in return for course credit. Subjects were randomly allocated to conditions, while treatments and measures were applied using the E-Prime2 (2008) research software. In relation to H_1 [*Formation*], we find that the use of inattentional stimuli does lead to the formation of specific brand associations, which on average were correctly identified 56 to 61 percent of the time at 95% confidence level. The effect was significantly degraded (by an average of 18%) in comparison to conditions with full attention, but remained statistically above chance (25 percent) at .05 level. Recognition was significantly better than choice, but no consistent effect of brand status or benefit was observed in our sample. Hence, the type of brand positioning made no difference to subjects' ability to understand that positioning.

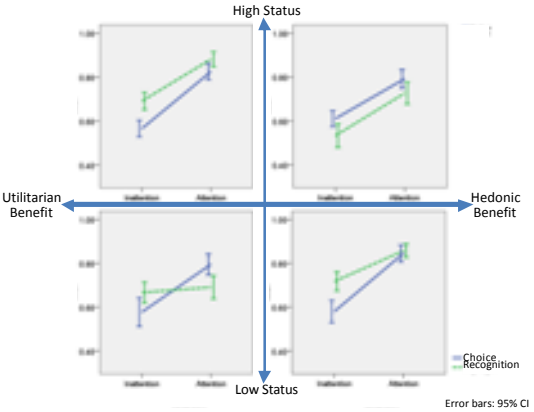

Figure 2. Formation Effect (H_1)

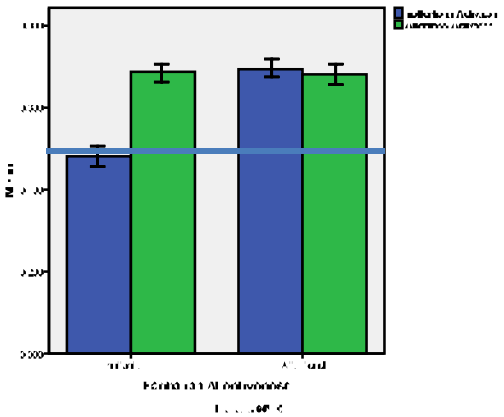

Figure 3. Interaction Effect (H_3)

In relation to H_2 [*Activation*], we also find a statistically significant attentiveness effect, $F(1,448) = 47.7, p < .05$, and greater than chance activation of prior brand association with inattentional stimuli. However, as shown in Figure 3, the inattentional activation effect interacts with the prior attention during association formation (i.e.: H3 [*Interaction Effect*]). That is, inattentional activation has an effect greater than chance (50 percent) only when prior learning is attentional. In contrast, attentional activation is just as effective given prior inattentional and attentional formation of brand image associations.

In relation to aided recall, respondents in the inattentional condition could not identify, above chance (50 percent), the images used during the learning phase (block 1) of the experiment. They identified 31 to 36 percent of images correctly at 95% CI; whereas respondents in the attentional conditions, recalled between 90 and 92 percent of the images correctly. Overall our results suggest that inattentional stimuli do lead to comprehension of brand positioning even though consumers may not recall the source of that comprehension. Implication for managers is that meaningful brand messages are important over merely capturing and holding consumer attention, since consumers appear to comprehend brand meaning even if they do not pay direct attention to the branding message. That is, it still matter what you say.

References

Aaker, J.L. (1997) "Dimensions of Brand Personality", *Journal of Marketing Research*, Vol. 34, August, 347-356.

Bosmans, A. & Baumgartner H. (2005) "Goal-Relevant Emotional Information: When Extraneous Affect Leads to Persuasion and When It Does Not", *Journal of Consumer Research*, Vol. 32, December, 424-434.

Bradley, B.P. (2004) "Selective Attention to Angry Faces in Clinical Social Phobia", *Journal of Abnormal Psychology*, Vol. 113, No. 1, 160-165.

Braun, J. & Julesz, B. (1998) "Withdrawing attention at little or no cost: detection and discrimination tasks", *Perception & Psychophysics*, Vol. 60, 1-23.

Chartrand T.L. & Bargh J.A. (1999) "The Chameleon effect: The perception-behavior link and social interaction", *Journal of Personality and Social Psychology*, Vol. 76, No. 6, 893-910.

Chartrand, T.L., Huber, J., Shiv, B. & Tanner, R.J. (2008) "Nonconscious Goals and Consumer Choice", *Journal of Consumer Research*, Vol. 35, August, 189-201.

Custers, R. & Aarts, H. (2005) "Positive Affect as Implicit Motivator: On the Nonconscious Operation of Behavioral Goals", *Journal of Personality and Social Psychology*, Vol. 89, No. 2, 129-142.

Fazio, R. H., Sanbonmatsu, D. M., Powell, M. C., & Kardes .F. R. (1986). "On the automatic activation of attitudes." *Journal of Personality and Social Psychology*, 50, 229-238.

Fitzsimons, Gavan J. (2008), "Death to Dichotomizing," *Journal of Consumer Research*, 35(1), 5-8.

Janiszewski, C. (1993) "Preattentive Mere Exposure Effects", *Journal of Consumer Research*, Vol. 20, December, 376-392.

Johnson, E. & Russo, J.E. (1984) "Product Familiarity and Learning New Information", *Journal of Consumer Research*, 11 (June), 542-550.

Keller, K.L. (2003) "Brand Synthesis: The Multidimensionality of Brand Knowledge", *Journal of Consumer Research*, Vol. 29, March, 595-600.

Kunst-Wilson, W.R. & Zajonc, R.B. (1980) "Affective Discrimination of Stimuli that cannot be Recognized", *Science*, Vol. 207, No. 4430, 557-558.

Mack, A. & Rock, I. (1998) *Inattentional Blindness*, Cambridge, MA, MIT Press

Menon, G. & Raghubir, P. (2003) "Ease-of-Retrieval as an Automatic Input in Judgments: A Mere-Accessibility Framework", *Journal of Consumer Research*, Vol. 30, September, 230-242.

Mischel, W. & Shoda, Y. (1995) "A Cognitive-Affective System Theory of Personality: Reconceptualizing Situations, Dispositions, Dynamics, and Invariance in Personality Structure", *Psychological Review*, Vol. 102, No. 2, 246-268.

Mogg, K. & Bradley, B.P. (1999) "Orienting of Attention to Threatening Facial Expressions Presented under Conditions of Restricted Awareness", *Cognition and Emotion*, Vol. 13, No. 6, 713-740.

Mogg, K., Bradley, B.P., Williams, R. & Mathews, A. (1993) "Subliminal Processing of Emotional Information in Anxiety and Depression", *Journal of Abnormal Psychology*, Vol. 102, No. 2, 304-311.

Reddy L., Wilken P., Koch C. (2004) "Face-gender discrimination is possible in the near-absence of attention", *Journal of Vision*, Vol. 4, 106-117.

Reddy, L., Moradi, F., & Koch, C. (2006) "Face identification in the near-absence of focal attention", *Vision Research*, Vol. 46, 2336-2343.

Russo, J.E., Meloy, M.G., & Medvec, V.H. (1999) "Pre-decisional distortion of product information", *Journal of Marketing Research*, Vol. 25, 438-452.

Simons, D.J. (2000) "Attentional capture and inattentional blindness", *Trends in Cognitive Science*, Vol. 4, 147-155.

Sperling, G. & Dosher, B. (1986) "Strategy and optimization in human information processing", In *Handbook of perception and human performance*, pp. 1-65, Wiley.

Strahan, E.J., Spencer, S.J., & Zanna, M.P. (2001). "Subliminal priming and persuasion: Striking while the iron is hot." *Journal of Experimental Social Psychology* 38(6), 2002, 556-568;

Whittlesea, B. & Price, J. (2001). Implicit/explicit memory versus analytic/nonanalytic processing: Rethinking the mere exposure effect." *Memory and Cognition*, 29, 234-246

Winkielman, P., Berridge, K. C., & Wilbarger, J. L. (2005). "Unconscious affective reactions to masked happy versus angry faces influence consumption behavior and judgments of value." *Personality and Social Psychology Bulletin*, 31(1), 121-135.

Zaltman, G. & Coulter, R.H. (1995) "Seeing the Voice of the Customer: Metaphor-Based Advertising Research", *Journal of Advertising Research*, 35, 4, 35-51.