How Does a Brand's Psychological Distance in an Advergame Influence Brand Memory of the Consumers?

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Abstract

Advergames are computer games through which marketers promote their brands. While many studies have explored the influence of gamification of advertising, little is known about the nature of the consumer-brand interaction and its effect on consumers' cognitive reactions. We address this gap by conducting three experiments in which we manipulate (a) consumers' level of message construal depending upon their interactions with the brands to complete game tasks, and (b) regulatory focus (individual-level and game-induced). We measure the effects on consumers' brand memory and also examine the mediating role of flow experience. Different samples comprising of post-graduate students and adults are used in the experiments. Results reveal that a low (vs. high) construal level yields stronger brand memory. Also, a fit between regulatory focus (promotion and prevention) and construal level (high and low) results in better brand memory. Flow experience mediates the effects of the independent variables on brand memory.

Keywords: Advergames, persuasion, memory, message frame, regulation, and psychological distance.

Introduction

Advertising is constantly changing. Technology has irrevocably changed the way it interests, entices, and entertains individuals through highly effective tools of persuasion (Kumar & Gupta, 2016). One such tool is the gamification of advertising (Mishra & Malhotra, 2020; Yang, Asaad, & Dwivedi, 2017), also commonly referred as advergames. Advergames are defined as "computer games specifically created to function as advertisements to promote brands, where the entertainment content mimics traditional game forms" (Kretchmer, 2005, p. 7). For example, in an attempt to showcase the superiority of one of its cereal brands (*Fruit Loops*) over fresh fruits, Kellogg's developed an advergame that allowed game players to earn more points by throwing the branded cereal instead of fruits in the mouth of a monster (Mallinckrodt & Mizerski, 2007). Approximately 9.1 billion USD were spent in 2020 on gamification of advertising and this expenditure is projected to grow to 30.7 billion USD by the end of 2025 (MarketsandMarkets, 2020).

Given this augmented attention and upward trend in spending, it becomes extremely critical to understand how game- and brand-related information are processed by consumers which shape their cognitive, affective, and conative brand responses, and eventually determine the success of this persuasive tool from an economic standpoint. Often, the nature of information processing depends upon how consumers interact with the brands embedded in the game and how these brands help in achieving the game tasks assigned to the consumers (Sreejesh, Anusree, & Ponnam, 2017; Terlutter & Capella, 2013). Consider, for example, a game called *Shrimp Attack* introduced by KFC[1] Japan in which the players were required to protect the KFC headquarter by throwing fried chicken strips to the shrimps who attacked the building. Although the game was elementary in design, consumers could use the brand

[1] Kentucky Fried Chicken (KFC) is an international fast food restaurant chain that is specialized in fried chicken recipes.

immediately in a meaningful way to complete the task. In comparison, Wendy's, another international fast food restaurant chain launched an endless running advergame called *Smoky Shroom Sprint* that asked the players to run through a range of terrains and merely collect burgers without providing any direct scope to immediately use the brand in the gaming environment. These are not isolated instances but are frequently experienced by consumers in many advergames that vary not only in the degree of consumer-brand interaction but also in terms of immediate versus delayed brand usage. From a theoretical perspective, these variations could be explained by the construal level theory (CLT) (Liberman & Trope 1998; Trope & Liberman, 2003) which suggests that individuals construe different meanings about an object or a persuasive message depending on various types of psychological distances – one of them being the temporal distance, that is, whether the object or message is relevant to the individual in the near versus distant future. Variations in temporal distance between actual consumption or use of a brand and its persuasive communication is found to affect consumers' construal levels differentially (Liberman & Trope 1998; Trope, Liberman, & Wakslak, 2007). If the persuasive message is relevant in the distant future, consumers construe descriptions about the message at a high level with more abstract and decontextualized representations in the cognitive hierarchy. In contrast, a persuasive message relevant in the immediate future is construed at a low level with concrete and contextualized descriptions. These variations in the construal levels affect critical consumer outcomes such as brand memory (Kim, Park, Wyer Jr., 2009), ad and brand evaluations (He, Chen, and Alden, 2016; Lee, Yoon, Kim, & Sung, 2020), purchase intentions (Chang, Zhang, and Xie, 2015), and choice (Sipila, Herold, Tarkiainen, & Sundqvist, 2017). While these studies and many others enrich our understanding about the role of CLT in explaining consumer behavior, most of them are conducted in traditional advertising contexts. It remains to be examined whether high versus low temporal distance plays an active role in shaping consumers' cognition about the brands embedded in an

entertainment-driven context such as advergame. Therefore, our first research objective is to investigate whether consumers construct diverse mental representations of the same brand based on whether it is relevant or useable in an advergame in the near or distant future, and eventually whether these representations affect their cognitive reactions such as brand memory.

We further build on our postulations and examine whether the memory effects of a persuasive message in an advergame featuring a low- or high-level construal depend on consumers' self-regulatory goal orientation. According to the regulatory focus theory (Higgins 1997, 2000), individuals with a prevention focus regulate their attitudes and behaviours to achieve safety and security, whereas promotion-focussed individuals regulate the same to realize growth and achievement. More importantly, it has been found in prior research that individuals with a prevention focus construe information at a low level, whereas promotion-focussed individuals are motivated to construe information at a high level (Lee, Keller, & Sternthal, 2010). Therefore, our second research objective is to understand the effects of a match versus mismatch between construal level and regulatory focus on brand memory. Our view is that when there is match between individuals' regulatory focus and the level of message construal in an advergame, their flow experience or the holistic sense of being present in the gaming environment (Ham, Yoon, and Nelson, 2016; Hsu & Lu, 2004) would increase. This would subsequently allow the individuals to exert more effort in processing the game-related tasks and process brand-related information in a deeper manner (Higgins, 2006; Hong & Lee, 2008) which, according to the level of processing framework (Craik & Lockhart, 1972), would eventually result in stronger memory of the advertised brands. In comparison, we expect weaker brand memory due to reduced flow experience and less intensified information processing in a condition characterized by the mismatch between one's regulatory focus and the construal level.

In the present research, we conduct three experiments to achieve these research objectives. In the first experiment, we examine the interaction between construal level (high versus low) and consumers' chronic regulatory focus (promotion focus versus prevention focus) on brand memory measured through aided recall, unaided recall, and recognition. Following this, the second experiment is conducted to validate the robustness of the findings in the context of manipulated or advertiser-induced regulatory focus instead of its chronic state among the consumers. Finally, in the third experiment we examine how flow experience mediates the effects of construal level and regulatory focus on brand memory.

Our research has several important theoretical implications. First, we advance the growing domain of research on gamification of advertising by incorporating an unexplored, yet fundamental, aspect such as construal level of consumers about the persuasive messages and understanding its role on the nature of information processing and cognitive response such as brand memory. In this way, the present article also contributes significantly to the CLT by departing from the frequently studied modes of communication (e.g., print, TV, and social media ads) and bringing fresh research insights from an entertainment-driven persuasion context such as advergames. Second, we contribute to the gamification literature by examining the persuasive effects of another critical and less-explored characteristic such as regulatory focus of the individuals and the persuasive communication in advergames. Third, we add value to the theories pertaining to individuals' construal level and regulatory focus by exploring situations that enable a logical fit between the constructs, and examining the effects of this fit or correspondence on consumer behavior.

The present research also has critical practical implications. The advertising budget is limited, and it becomes necessary for advertisers to investigate the efficacy of different promotional techniques. We help marketers make an informed decision regarding whether to make the brands more useable immediately in the gameplay or at a later point in time during

actual consumption. Manipulation of the immediate versus delayed brand usage has, as we demonstrate later, thoughtful implications on consumers' brand memory. Also, we marshal evidence in support of the match between the construal levels of persuasive messages with a game-induced or chronic regulatory focus of individuals which offers prescriptions to the marketers for influencing consumers' brand memory. Finally, knowledge about consumers' self-regulatory goals and a fit of these goals with the construal levels provide a guide to develop advergames at the appropriate level to enhance flow experience which might have positive influences on the affective and conative dimensions of consumer behavior other than brand memory.

Literature Review and Hypotheses

Gamification of Advertising

Play has always fascinated and attracted the humankind. With increased digitalization and proliferation of the Internet, it is no wonder that digital games are prevalent and continue to diffuse. According to a recent survey, the worldwide gaming audience was 1.82 billion in 2014 and expects to grow to 2.73 billion by the end of 2021 (Statista 2020). In the pursuit of chasing potential consumers, marketers eventually started the ingenious exploitation of digital games as an advertising platform. Arguably the first advertisement appeared in 1978 in a digital game called *Adventureland* that promoted another game called *Pirate Adventure* within it. Since then, marketers have consistently used gamification of advertising as a tool to attract consumers of all ages toward their brands.

As advergames gained momentum over time, more research was conducted to understand their persuasive efficacy. Terlutter and Capella (2013) have synthesized existing literature in this domain and have provided a holistic framework that explains how advertising in digital games work. Their framework reveals that there are several brand and game characteristics (e.g., game genre, placement proximity, game rhetoric, brand-game congruity,

etc.) that affect consumers' psychological responses. These responses include cognitive (e.g., brand recall, brand recognition, etc.), affective (e.g., brand attitude), and conative reactions (e.g., propensity to buy, WOM intention, etc.) which further determine consumers' behavioural outcome toward the game and the brand (e.g., game re-play, purchase of the brand, etc.). The authors also suggest that these aforementioned relationships are moderated by several individual traits and contextual variables such as gender, brand familiarity, flow experience, gaming experience, susceptibility to advertising, etc. Nelson and Waiguny (2012) provide another comprehensive organization of empirical studies in the domain of gamification of advertising. These authors advance our understanding of the psychological processes adopted by consumers while playing advergames, the important mediating and moderating variables involved in the processes, and the overall effectiveness of advertised brands on the consumers. Finally, a meta-analytic investigation of the effects of advergaming on consumers has been conducted in the recent past that reveals advergames, as compared to non-gamified advertising messages, have more positive effects on brand memory, ad attitude, persuasion, persuasion knowledge, and choice behavior (van Berlo, van Reijmersdal, & Eisend, 2021). Generally speaking, the gamification of advertising literature is vast. Therefore, for the purpose of our research, we provide a summarized view (see **Table 1**) of the most critical studies related to consumers' interaction with the brands in advergames and how they process game- and brand-related information during these specific interaction episodes.

[Paste Table 1 Near Here]

Although these studies are meritorious in their own right, they do not examine how the embedded brands are relevant in solving the game tasks in an immediate or delayed time frame, and how this relevance affects players' cognitions such as brand memory. We address this research gap by drawing the conceptual fabric from the CLT which is discussed next.

Construal Level Theory

Construal level theory (CLT) postulates that individuals develop varying representations of stimuli encountered in their environments, that differ in the level of abstraction (Liberman & Trope, 1998; Trope & Liberman, 2003). Individuals who employ more abstract mental models construe information about the stimuli and represent them in a simple, coherent, and decontextualized manner by extracting the main essence from the information (high-level construal). Hence, these individuals are generally affected by the abstract features of a stimuli, such as those which are stereotypical in nature and are resulted from the generalizations and abstractions about the behavior and characteristics of people, events, and objects (Ashmore & Del Boca, 1981; Bordalo, Coffman, Gennaioli, & Shleifer, 2016; Ghosh, Sreejesh, & Dwivedi, 2021; Hilton & von Hippel, 1996). In comparison, individuals employing concrete mental models construe information which are represented in a complex, incidental, and contextualized manner (low-level construal). Therefore, these individuals are generally affected by specific features of a stimuli, such as those which are highly contextual in nature and are laden with granular details about events, people, and objects (Bordalo, Coffman, Gennaioli, & Shleifer, 2016; Hilton & von Hippel, 1996).

CLT has a close resemblance with the action identification theory (Vallacher & Wegner, 1987) that confirms an analogous distinction. This theory posits that identities of various actions performed by individuals can be arranged in a cognitive hierarchy ranging from low-level identities, i.e., *how* one acts, to high-level identities, i.e., *why* one acts. This how versus why distinction is very similar to the low and high construal levels. To cite an instance, people who construe about an event or action of "eating breakfast" at a high level and with an abstract frame of mind would find the message "getting a whole day's nutrition" more meaningful than the message "mixing cereal with milk". On the other hand, for those who construe the same event or action at a low level and has a concrete mindset would resonate

more with an activity such as “poring honey on pancakes” than with “boosting energy for the day”.

Tests of CLT reveals that construal level is determined by the psychological distance between the individuals and the stimuli (i.e., information, objects, events, or individuals) (Kim & John, 2008; Liberman & Trope, 1998; Trope & Liberman, 2003). This theory further asserts that psychological distances in terms of temporal, spatial, and social dimensions determine individuals’ mental processing and the level of abstraction. Though all these three types of psychological distances are relevant in explaining mental construal, a great deal of evidence exists in the advertising domain which provides stronger support toward the use of temporal distance in explaining construal levels, information processing, and consumer-level outcomes (e.g., Chang, Zhang, & Xie, 2015; Lee, Fujita, Deng, & Unnava, 2017; Martin, Gnoth, & Strong, 2009; Theodorakis & Painesis, 2018).

The temporal distance is the “perceived psychological distance of how much time separates the perceiver’s present time from the target event” (Martin, Gnoth, & Strong, 2009, p. 6). For example, a motorcycle to be bought within a week represents a near-future event, and when planned to be bought in a year becomes a distant-future event. The temporal construal theory posits that individuals use low-level and high-level construals to represent near-future and distant-future events respectively. Therefore, as the temporal distance increases, individuals are more prone to form abstract meanings of the available information and tend to use primary features (e.g., performance of the motorcycle) instead of secondary features (e.g., location of the dealer) of the stimuli (Trope & Liberman, 2003). This happens because distant-future preferences, as compared to near-future ones, provide lesser scope to immediately and directly experience the target object and, therefore, encompass less complicated cognitive structures and more schematic representation of the object (Liberman, Sagristano, & Trope, 2002; Liberman, Trope, & Stephan, 2007). More importantly, prior studies suggest a coherent

relationship between temporal distance, construal level, and memory of the objects (Anderson, 2003; Fazio, Powel, & Williams, 1989). These studies reveal that when the information about an object is construed at a low-level due to closer temporal distance, contextually rich mental representations of the target object help in the formation of strong memory traces that are easily retrieved at a later point in time (Anderson, 2003; La Corte & Piolino, 2016). In comparison, when individuals construe information at a high level due to farther temporal distance, abstract representations without contextual descriptions of the object lead to weak memory traces that are difficult to retrieve (Chiba, Kesner, & Gibson, 1997; La Corte & Piolino, 2016).

We build on these empirical evidences to examine the effects of immediate versus delayed brand usage in an advergame on consumers' brand memory. Specifically, we argue that when consumers get to use the brand immediately in a meaningful way to complete game tasks, they construe the brand-related information at a low-level, and form highly contextualized representations of such information in their memory. Eventually, this would reflect in stronger memory of the brands embedded in the gaming environment. Conversely, when the advergame provides lesser scope of immediate brand usage to complete game tasks, brand-related information is construed at a high level with abstract representations of the information in consumers' memory. This would result in weaker memory performances of the advertised brands. Based on these lines of argument, we hypothesize the following:

H1: A low-level message construal in an advergame results in stronger brand memory than a high-level message construal.

Regulatory Focus Theory

Regulatory Focus (RF) is a motivational construct that explains why individuals engage in approach- and avoidance-related behavior while performing any tasks given to them (Higgins 1997, 1998). These tasks can be anything such as taking a competitive examination, solving a sudoku puzzle, or playing an advergame. RF is an individual-level trait variable

which differentiates between two types of self-regulation: promotion focus and prevention focus (Crowe and Higgins, 1997; Higgins 1998; Scholer, Cornwell, & Higgins, 2019). According to the RF theory, promotion focused people focus on the presence and absence of positive outcomes, are motivated to *approach* these outcomes, and achieve self-regulation in terms of ideal standards, i.e., accomplishments, goals, and advancement (Higgins, 1997, 1998; Scholer, Cornwell, & Higgins, 2019). Prevention focused people, on the other hand, focus on the absence and presence of negative outcomes, are motivated to *avoid* these outcomes, and self-regulate themselves according to ought standards, i.e., responsibilities, obligations, and duties (Higgins, 1997, 1998; Scholer, Cornwell, & Higgins, 2019). For example, *to get a good score in an examination* it is expected that promotion focused students would tend to study hard in the library while prevention focus students would avoid partying out frequently with friends. It is also known that RF is not limited to being only a chronic personality trait among people. Empirical evidences exist in the domain of advertising, including advergames, which reveal that situational factors like message framing and task conditions can also induce either a promotion or a prevention focus among individuals (e.g., Coleman, Royne, & Pounders, 2020; Ghosh, 2016; Roy & Ng, 2012; Roy & Phau, 2014).

Most importantly, researchers recognize a match or fit between individuals' regulatory focus and the level of message construal employed by them in different task situations (Cai & Leung, 2020; Forster & Higgins, 2005; Lee, Keller, & Sternthal, 2010; Park & Morton, 2015; Pennington & Roese, 2003). Although any message can be construed at a "how" (low) or "why" (high) level, this stream of literature posits that some messages are more compatible with a particular RF, that results in a higher regulatory fit, which eventually enhances cognition and persuasion of individuals. Messages are more persuasive when they are easier to process, just feel right, or are more relevant to individuals (Cai & Leung, 2020; Lee, Keller, & Sternthal, 2010). Typically, promotion-framed messages or promotion-focused individuals are more

compatible with a high-level construal, whereas prevention-framed messages and prevention-focused individuals are more compatible with a low-level construal (Forster & Higgins, 2005; Lee, Keller, & Sternthal, 2010). This correspondence between RF and construal level can be logically explained as follows: since prevention-focused individuals are strategically inclined to limit their errors or probabilities to commit mistakes, low-level "how" construals provide them concrete representations and the information specificity of events and objects needed to avoid these errors of commission (Lee, Keller, & Sternthal, 2010). Alternatively, since promotion-focused individuals adopt an eagerness strategy to attain their accomplishments and are strategically inclined to achieve gains, high-level "why" construals provide them the reasons of why things are done which helps them to achieve their goals and safeguard against errors of omission (Lee, Keller, & Sternthal, 2010).

In the present research, we argue that a low versus high level of message construal due to immediate and delayed brand usage in an advergaming context would have regulatory fit with prevention-focused and promotion-focused individuals respectively. Subsequently, this regulatory fit would affect consumers' cognition positively that would eventually be reflected through enhanced memory of the brands embedded in the advergame. Therefore, we hypothesize the following:

H2a: Prevention-focused individuals have stronger brand memory in the case of a low-level message construal than a high-level message construal in an advergame.

H2b: Promotion-focused individuals have stronger brand memory in the case of a high-level message construal than a low-level message construal in an advergame.

Mediating Role of Flow Experience

The concept of flow experience was first introduced by Czikszentmihalyi (1975) who defined it as "the holistic sensation that people feel when they act with total involvement" (p. 36). It is characterized by a fine balance between challenge and skills, which produces highly

focussed attention, intrinsic motivation, intense enjoyment, loss of self-awareness, and time distortion (Czikszentmihalyi, 1975). To put it in simple words, individuals, in a state of flow, are highly engaged in a specific activity and "nothing else seems to matter" to them (Czikszentmihalyi, 1990, p. 4). This construct has been extensively used in the context of computer-mediated environment (e.g., Hsu & Lu, 2004; Kim & Ko, 2019; Skadberg & Kimmel, 2004). Researchers have also recognized the role of flow experience in explaining persuasive effectiveness of advergames because these platforms trigger enjoyment among the players, allow them to maintain a balance between challenge and skills, and produce optimal game-playing experience in a reward driven environment (Steffen et al., 2013; Waiguny, Nelson, & Terlutter, 2012).

In the present research, we intend to examine players' flow experience induced by the fit between RF and construal level. Specifically, we argue that flow experience would mediate the interaction effects of RF and construal level on players' brand memory. The fit from construal hypothesis postulates that individuals who experience regulatory fit are more engaged in a task and hence are more inclined to exert greater effort in processing information related to the task than those who experience nonfit (Higgins, 2006; Hong & Lee, 2008). In the advergaming context, we expect that a fit between prevention focus and low-level message construal would allow the individuals to engage more and experience flow in the gaming environment, and process game- and brand-related information effectively. Similarly, a match between promotion focus and high-level message construal would enable the players to experience a sense of flow and therefore remain more engaged in deeply processing the information during the gameplay. Eventually, according to the well-known level of processing framework (Craik & Lockhart, 1972; Morris, Bransford, and Frank, 1977), deeper processing of the environmental stimuli including embedded brand elements would result in better

memory of the advertised brands (Craik & Lockhart, 1972). Therefore, we hypothesize the following:

H3: The interaction effect of message construal and regulatory focus on brand memory is mediated by flow experience.

Study 1

The purpose of Study 1 was to examine the effects of the different levels of message construal in an advergame on individuals' brand memory. Besides this, this study also tested the fit from the construal prediction that promotion focused individuals are inclined to construe information at a higher level and prevention focused individuals are oriented to represent information at a lower level, which are expected to affect brand memory directly and also mediated through individuals' flow experience. For this purpose, we conceptualized and measured individuals' chronic or predisposed RF.

Design and Subjects

In this study, we employed a one group (construal level: high vs low) between-subject experimental design. While construal level was manipulated in the experiment, subjects' chronic RF was measured using scale items. A total of 120 post-graduate students (male: 65%, mean age: 21.2 years) enrolled in a business school in India participated in the experiment. Although the use of student samples is generally criticised in studies related to consumer research, experimentation using under-graduate and post-graduate students are found to be appropriate in past advergame-related studies (Ghosh, 2016; Peters & Leshner, 2013).

Stimuli Selection

We conducted one focus-group interview comprising of post-graduate students (n = 10, mean age = 21.6 years) to identify the game genre. The focus group identified action as a popular genre in which the advergame was developed. For this purpose, a professional game-development agency was recruited who developed a first-person action game in which the

subjects were required to take the role of a thief named *Jumanji* and plunder valuable items as much as possible from a city within 20 minutes. As the plunder continued, the overall game score increased which was displayed to the subjects in the form of a *loot count*.

In this game, construal level was manipulated by including two different types of branded stores (fictitious) from where money or items could be looted. The first set of brands included names such as "DUTCH BANK", "XIO DIAMONDS", "MOYA CASTLE", "LEGENDARY PLATINUM", and "LULA LUXURY SHOPPING" that were highly relevant to the subjects and allowed them to immediately use in the gaming environment to complete the task, i.e., to plunder as much as possible. Also, the loot count mentioned earlier increased at a fast rate while these brands were used (i.e., looted) during the gameplay. Therefore, these brands were aligned with the near-future preferences of the subjects and represented low-level construals. In comparison, the second set of brands included names such as "XIK TYRES", "OPTIC RESTAURANT", "TRANSIT SERVICES", "OKAO FOREIGN EXCHANGE", and "DENIN TRAVELS" that were less relevant with respect to the plundering needs of the subjects who could not immediately use them to the fullest extent possible. This was explicitly reflected through the slow pace of increment of the loot count in the game. Hence, these brands were aligned with the subjects' distant-future preferences and represented high-level construals.

Procedure

One month prior to the experiment, the researchers put up a notice with the heading "gamification research and experiments" on the business school's general notice board. The notice invited interested students with prior video game playing experience to participate in the experiment. Within a week, 203 subjects showed their willingness out of which 120 subjects were randomly chosen for the experiment. These students arrived in batches of 7 to 10 and were randomly allocated to two rooms in the computer laboratory of the institute (Room 1:

low-level message construal, Room 2: high-level message construal). In both the rooms, moderators were present who gave general instructions of how to play the game without mentioning brand types and inherent psychological mechanisms. At the end of the gameplay, the subjects closed their devices and filled in the questionnaire. The questionnaire included questions regarding manipulation check items, dependent variables, control variables, and subjects' demographics. The subjects were finally thanked and debriefed.

Measurement Instruments

To measure brand memory, we asked the subjects to complete three tasks in the following sequence: (a) an unaided recall test for the brand names used in the gameplay, (b) a recognition test for the product categories of these brand names, and (c) an aided recall test to fill up incomplete brand names. In each of these tasks, subjects' score varied between 0 (no correct answer) to 5 (all correct answers). Finally, a memory index was created by averaging the scores from these three tasks which was used later during the analysis.

To measure subjects' chronic RF, we adapted the scale from Lockwood, Jordan, & Kunda (2002) consisting of 18 items: 9 items each for capturing promotion focus and prevention focus. For each subject, promotion and prevention focus scores were calculated separately by averaging respective scale items. These items were measured on a seven-point scale ranging from 1 = "totally disagree" to 7= "totally agree".

Besides this, we also considered the fact that subjects' prior game playing experience and easiness to play the game could confound the hypothesized relationships. Hence, the study included two important covariates: (1) perceived easiness of the game (single item adapted from Davis, 1985), and (2) game playing experience (single item adapted from Chaney, Lin, and Chaney, 2004).

After that, we asked the manipulation check items. To measure the same, we followed the extant temporal construal research, which suggests that near-future events should be more

proximal and concrete (Martin, Gnoth & Strong, 2009). To capture the same, we adapted the scales from Chandran & Menon (2004) & Martin, Gnoth & Strong (2009) and measured proximity. We asked the participants to indicate the extent to which the brand presented in the game is proximal using two seven-point items scale (*later after the gameplay:* after some time, vs now; *during the gameplay:* distant future vs near future). We also measured concreteness elicited by the brand on two seven-point items scale (not imagery provoking vs imagery provoking, dull vs vivid), and the scale adapted from Unnava and Burnkrant (1991).

Finally, the questionnaire included items to measure subjects' demographics such as age, education, income, and gender.

Data Analysis and Results

To examine the manipulation, we performed two different multivariate analysis of variances (MANOVA). First MANOVA reported a significant main effect and revealed that people exposed to distant future ad (vs. near future) indicated that they perceived the ad/brand in the game as more distant future event ($M_{distant}$ = 3.11) in comparison with the near-future condition (M_{near} = 5.56, F = 34.12, $p < .001$). Followed by this, the second MANOVA also supported that people exposed to near-future construal perceived the ad/brand presented as more concrete (M_{near} = 5.51) in terms of generating the mental imagery in comparison with the other condition ($M_{distant}$ = 3.99, F = 24.32, $p < .001$). Thus, these results indicated that the manipulation of temporal construal was successfully executed.

Next, we tested the hypotheses using simple regression analysis (H1), and PROCESS approach (H2a & H2b) suggested by Hayes (2013, 2018). As part of testing H2a and H2b we applied Model 1, where two different models were executed. In the first model, we included construal (coded as: 1 = low level & 0 = high level) as an independent variable, prevention focus as a continuous moderator, and brand memory index as the outcome variable. The second model was similar to the first one, where we reverse coded the construal level (coded as: 0 =

low level & 1 = high level) and considered it as an independent variable. In this model, instead of prevention focus, we considered promotion focus as the continuous moderator. In the preliminary stage, while examining the significance of the covariates, none of these covariates reported to have significant effect in these two models. Hence, we dropped these covariates from the subsequent analyses.

As part of testing H1, we first performed a regression analysis with brand memory as the dependent variable, and message construal (coded as 1 = low level & 0 = high level) as the independent variable. The results indicated differences in construal level exposure (low vs. high) on brand memory ($\beta = 1.082$, S.E = 0.078, $p < 0.01$). More specifically, as shown in **Table 2**, this result indicated that construal level affected brand memory in a way that subjects exposed to the low-level construal condition had stronger brand memory than those exposed to the high level. Therefore, H1 was supported.

Thereafter, we examined the interaction effect of construal level × prevention focus on brand memory, and the results of which revealed a significant interaction estimate ($\beta = .9149$, S.E = .1317, $p < 0.01$). Specifically, as reported in **Figure 1a**, the results indicated that a low-level message construal exposure improves the brand memory among those subjects whose chronic prevention focus is on the higher side. However, in a high message construal condition, brand memory reported as consistent among gamers with different magnitude of prevention focus orientation. This was clearly evident from the Johnson-Neyman analysis (**See Table 3**) which statistically confirmed that the higher level of brand memory reported in low (vs. high) message construal condition increases with increase in gamers' prevention focus orientation. Therefore, we supported H2a.

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Insert Figure 1a & Table 2 & 3

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The interaction effect of construal level × promotion focus on brand memory was also reported as positive and significant (β = .882, SE = .173, p < 0.01). As shown in **Figure 1b**, this result indicated that, though brand memory is higher when there an exposure to low message construal, an exposure to high level message construal (vs. low level) improve the brand memory of those gamers whose promotion focus orientation is on the higher side. However, this improvement is not evident when there an exposure of low-level message construal condition (as evident from the parallel line in case of low message construal). This is also statistically confirmed by Johnson-Neyman analysis (**See Table 4**), where the results reported that, in case of high (vs. low) level of message construal exposure, the brand memory reported as higher among those gamers whose promotion focus orientation is reported as higher. Therefore, we supported H2b.

[Paste Figure 1b Near Here]

[Paste Table 4 Near Here]

Study 2

The main objective of this study was to depart from conceptualizing RF as a chronic individual-level personality trait and examine whether situational RF primed through the advergame interact with people's construal level and affect brand memory. This way we intend provide salient implications to the marketers regarding the effective design of their marketing stimuli to influence consumers' nature of information processing and subsequent outcomes at cognitive, affective, and conative levels.

Design and Subjects

We employed a 2 (construal level: high vs low) × 2 (RF: promotion vs prevention) between-subjects experimental design. In this study, the manipulation of construal level was done in a way similar to Study 1. However, unlike the previous study, RF was manipulated among the subjects by bringing changes in the experimental stimuli (advergame). Also,

different from Study 1, we recruited a sample of 132 adult subjects (male: 68%, mean age: 37.4 years) who were members of a social networking website. Thus, we also increased the generalizability of the overall research findings by moving beyond student population.

Stimuli, Procedure, and Measurement Instruments

The brands and advergame used in Study 2 were similar to those used in the previous study. However, for the purpose of manipulating RF, two different versions of the game objective were developed by the researchers. In the promotion focus condition, subjects were exposed to the objective "*Hello Jumanji! Your goal is to plunder the city and make as much money as possible*". In comparison, subjects in the prevention focus condition read the objective "*Hello Jumanji! Your goal is to plunder the city without getting caught by the city cops*". The use of gain-framed and loss-framed messages such as these to prime RF among the subjects is a long-drawn practice in the marketing literature, including advergames (Ghosh, 2016; Kim & Sung, 2013; Zhao & Pechmann, 2007). Therefore, we could easily adopt such a practice in the present research. These objectives were shown to the subjects using a pop-up window immediately after they started playing the game.

The subjects were recruited from a social networking website. Invitations were sent to 1028 members out of which 263 members agreed to participate in the experiment. We eventually selected a sample of 127 randomly from this pool and collected their emails two weeks prior to the experiment. Due to the COVID-19 pandemic, the experiment was conducted on the Internet instead of inviting the subjects in a physical setting. Two days before the experiment, an email was sent to the subjects which included general instructions related to playing the game and filling the questionnaire. On the day of the experiment, each subject was randomly assigned to one of the four experimental conditions and the link of the appropriate advergame version was sent via an email. The link of the online questionnaire was emailed to

the subjects 20 minutes later. In this email, we also debriefed and thanked them for participating in the experiment.

The questionnaire in this study was identical to Study 1. Only the items to check the manipulation of RF in the advergame were different and were adopted from Ghosh (2016). All other variables including the covariates and subjects' demographics were exactly similar to those used in the previous study.

Analysis and Results

First, we checked the manipulation. In support with study 1, the manipulation check results using MANOVAs reported that the manipulation of temporal construal executed successfully. Further, the manipulation check of RF using two different ANOVAs revealed that people exposed to promotion focus condition (vs. prevention focus) reported a higher mean score on the promotion-focused dimension ($M_{promotion\ focus}$ = 5.44 vs. $M_{prevention\ focus}$ = 2.99, F = 12.11, $p < 0.01$). Similarly, gamers exposed to prevention-focused condition (vs. promotion focus) reported a higher mean score on the prevention focus dimension ($M_{prevention\ focus}$ = 5.35 vs. $M_{promotion\ focus}$ = 2.99, F = 18.90, $p < 0.01$). Thus, the study confirmed the successful execution of the RF.

Thereafter, we performed a 2 (construal level: high vs low) × 2 (RF: promotion vs prevention) between-subject analysis of covariance (ANCOVA) with brand memory index as the dependent variable and the covariates mentioned. However, similar to Study 1, the covariates did not exhibit any effect ($p > 0.01$) on the dependent variable. Hence, we dropped them from further analyses. As reported in **Table 5**, the results supported a significant main effect of construal level on brand memory (F = 72.58, $p < 0.01$), and subjects exposed to those a low-level construal condition reported stronger brand memory ($M_{low\ construal}$ = 3.46) compared to those exposed to a high-level construal condition ($M_{high\ construal}$ = 2.31). These findings were consistent with the previous study. Further, the results supported a significant interaction effect

on brand memory ($F = 40.87$, $p < 0.01$). A series of pre-planned contrast tests revealed that when the messages were construed at a low level, a prevention focus condition led to stronger brand memory performances than a promotion focus condition ($M_{\text{low construal – prevention focus}} = 3.90$ vs. $M_{\text{low construal – promotion focus}} = 3.51$, $F = 6.402$, $p < 0.01$). This led to further support of H2a. Contrary to this, when the messages were construed at a high level, subjects in the promotion focus condition had better brand memory than subjects in the prevention focus condition ($M_{\text{high construal – prevention focus}} = 1.66$ vs. $M_{\text{high construal – promotion focus}} = 2.95$, $F = 39.38$, $p < 0.01$). Therefore, it also provides further confirmation to H2b.

[Paste Table 5 Near Here]

Study 3

There were two purposes behind conducting Study 3. First, it tested how subjects' flow experience in the advergame mediated the effects of construal level and RF on brand memory. Second, we intended to examine the hypothesized relationships in the context of a different game genre, namely videogames for health (commonly referred as G4H). This way, we aimed at increasing the generalizability of the research findings, depart from the commercial agenda of advergames, and examine its efficacy in promoting a social persuasive message to people.

Design and Subjects

A 2 (construal level: high vs low) × 2 (RF: promotion vs prevention) between-subjects experimental design was employed in this study. Both construal level and RF were manipulated during the experiment. A sample of 240 adult subjects (45.6% male, mean age = 32.1 years) with an average game playing experience of 3.4 years was recruited from a large consumer panel.

Stimuli, Procedure, and Measurement Instrument

First, we conducted a focus group interview with a sample of 12 adult subjects (mean age = 33.6 years) the purpose of which was to identify foods (either raw or cooked) with

immediate and delayed health benefits. The subjects identified foods such as dark chocolate, green tea, yogurt, oats, and walnuts which could be consumed to achieve instant benefits. They also identified foods such as whole wheat products, baked fish, cottage cheese, rice bran oil, and leafy vegetables that had delayed or long-term health benefits. Once these foods were identified, the researchers reapproached the game development agency recruited earlier to develop a G4H advergame whose purpose was to promote healthy eating habits. Accordingly, an endless running game (first-person) was developed in which the subjects had to play the character of a middle-aged man (*Rahul*) or woman (*Asmita*) and run for 10 minutes in a city, enter branded stores, and purchase food items. A calorie count monitor kept track and displayed the calories of the foods they purchased. Based on the results of the focus group interview, two sets of fictitious brand names were developed by the researchers to manipulate near and far temporal distance that triggered low and high message construal respectively. The first set of brands included names such as "BRIOLI GREEN TEA", "CALFIT OATS", "HURLY DARK CHOCOLATE", "MISTI YOGURT", and "MEZON WALNUTS" which represented a low-level construal due to their immediate usage in improving health. In comparison, the second set of brands included names such as "DONIKA BAKED FISH", "ROLIE VEGETABLE SANDWICH", "BRIXLY WHOLE WHEAT PASTA", "NANDI COTTAGE CHEESE", and "TATUN RICE BRAN OIL" that had delayed health benefits. Moreover, the calorie count monitor increased at a faster rate in the former condition than the latter one.

RF was manipulated in the advergame in a manner similar to Study 2. Before the subjects started playing the G4H advergame, a message popped up on the screen which displayed two different game objectives. In the promotion focus condition, the following objective was shown to the subjects: "*Hello Rahul/Asmita! Your goal is to run in the city and buy healthy foods that will help you in becoming physically fit*". In comparison, the prevention

focus condition displayed the objective: "*Hello Rahul/Asmita! Your goal is to run in the city and buy healthy foods that will help you stay away from illness*".

The subjects were recruited from a large consumer panel. Invitations to participate in the experiment were posted in the group one month prior to the experiment. Out of 453 interested members of the panel, we randomly selected a sample of 240 subjects who received an email with detailed participation-related instructions two days before the experiment. Thereafter, we assigned them randomly in the four treatment conditions and emailed the stimuli and the link of the online questionnaire in a way similar to Study 2. Once the data collection was complete, the subjects received a final email that debriefed and thanked them for their active participation.

The questionnaire had all the variables and items (manipulation check, dependent variable, and covariates) identical to Study 2 except the fact that items on flow experience were additionally included in it. These items were adapted from prior literature and were measured on a 1 (strongly disagree) to 5 (strongly agree) Likert scale.

Data Analysis and Results

First, we confirmed whether or not the experimental manipulations were successful. Similar to Study 1 and 2, the results revealed that the manipulations on the subjects were successful. Further, the covariates in this study also were not found to significantly affect the dependent variable, i.e., brand memory index. Hence, we decided not to retain these covariates during further analysis. Since the study's primary objective was to test H3, we followed the PROCESS approach recommended by Hayes (2013, 2018), where we used Model 7 with 10,000 bootstrapped samples. Before the formal test of conditional indirect effect analysis, we first examined the descriptive statistics and correlation estimates of the variables under consideration (See Table 6). This provides some preliminary insights about the difference in

relationship between the causal variable and the outcome, across the postulated conditions, and also the intervening role of flow experience.

As shown in Table 7, the model test results supported that the interaction between construal level × RF carry statistical influence on flow experience (β = 1.7143, S.E = 0.0487, t = 35.20, p < 0.01) indicating that the differential effect of message construal on subjects' flow experience, and the conditional role of RF conditions. Specifically, it revealed that in case of low-level message construal condition, the gamers flow experience reported as high when the RF was prevention-oriented (effect = 1.266, t = 36.76, p < 0.01) in comparison with promotion-oriented RF condition (effect = -0.448, t = -13.01, p < 0.01). Further, the effect of flow experience on brand memory was positive and significant (β = .868, t = 35.08, p < 0.01). Further, linking these two paths together, we analysed the conditional indirect effect, which revealed that the effect of construal differences (low vs. high) develop into brand memory through flow experience more strongly when there is prevention oriented RF (indirect effect: 1.099, Boot-S.E = 0.0410, 95%-LLCI= 1.0192, ULCI = 1.1784), in comparison with promotion oriented RF (indirect effect: -0.3892, Boot-S.E = 0.0276, 95%-LLCI= -0.4442, ULCI = -0.3353), and this difference in indirect effect also evident in the statistically significant index of moderated mediation (Index: 1.4884, Boot-S.E = 0.0506, 95%-LLCI= 1.3895, ULCI = 1.5849). Therefore, H3 was supported.

[Paste Table 6 & 7 Near Here]

Discussion

An integral facet of determining the performance of advergames is to understand how consumers interact with the game and the embedded brands. A plethora of research has been conducted in the past toward this end. While most of these studies are meritorious in their own rights, most of them ignore the extent to which the advertised brands facilitate completion of the game tasks, and whether such a facilitation results in differences in the nature of information

processing that eventually affects consumer behaviour. In the present research, we draw on the conceptual fabric of the CLT and RF theory to attain this objective. Specifically, in the first study we postulate that when the consumers are able to use the brands immediately in a relevant manner to complete the game tasks, a near-future temporal distance allows the consumers to construe brand-related information at a low level. On the contrary, when the advergame triggers delayed brand usage to achieve the game objectives, a distant-future temporal distance leads to the construal of brand-related information at a high level. These differences in low versus high construal levels create concrete (contextualized) and abstract (decontextualized) representations of the information respectively, that subsequently manifests in terms of strong versus weak brand memory. We further find that individuals' chronic RF interacts with the construal levels in such a way that a regulatory fit between promotion focus and high construal yields better memory. Similarly, a prevention focus – low construal fit allows the consumers to remember more brand-related information from the advergame. These relationships are further validated in the second study where RF is treated not as a chronic individual-level trait but as a situational factor induced among the consumers using different game objectives. Finally, in the third study we exhibit that consumers' engagement or flow experience during playing the advergame mediates the effects of RF and construal level on brand memory. These studies also use different types of subjects (students and adults) and game genres (action and health promotion) which increase the generalizability of the research findings.

Theoretical Implications

Our research has salient theoretical implications. First, it advances the body of knowledge on gamification of advertising by examining a distinctive nature of interaction between RF and message construal and its effect on brand memory. Although a lot is already known about the effects of a large number of game and brand characteristics on consumers' cognitive, affective, and conative responses (see Terlutter and Capella, 2013 for a

comprehensive literature review), our research is the first of its kind that provides granular insights about the nature of consumer-brand interactions required to complete game tasks, and how these interactions, characterized by their temporal distances, help in construing brand-related information at different levels to affect brand memory. Second, the present research contributes to the CLT by bringing fresh insights from a non-traditional and entertainment-driven persuasion media such as advergames. Not only are we able to ground the research findings in the domain that are consistent with a limited pool of studies dealing with the memory effects of temporal distances (Anderson, 2003; Chiba, Kesner, & Gibson, 1997; La Corte & Piolino, 2016), but we also exhibit that these effects could be observed in a *casual* information processing scenario such as playing digital games. Third, we add value to the RF theory by demonstrating how consumers can be induced with promotion or prevention focus with the use of different types of game objectives in advergames. Although the use of situational factors and task conditions to prime distinct RF in individuals is a well-researched domain in the marketing literature, very few studies (e.g., Ghosh, 2016) have examined it in a novel context such as advergames. Our research not only examines and validates such a possibility but also explores how chronic and game-induced RF interact with construal levels and affect consumers' flow experience and brand memory. These research findings chart a new direction in the emerging field of product placement research, specifically advergames, by emphasizing the need to examine the role of various game and brand attributes in inducing RF in the individuals that might influence their behaviour in significant ways.

Practical Implications

The present research also has key takeaways for the marketers. First, it provides strategic directions to the advertisers about the inclusion of specific game tasks in such a way that trigger a low level of construal and enhance brand memory of the consumers. While this approach may appear instinctive at first glance, advertisers are often found to include such

brands in the gaming environment that do not facilitate the players to use them immediately to achieve the game objectives (e.g., recall the *Shrimp Attack* game described earlier). Our research suggests that such an approach should be avoided and advertisers should put more conscious effort in designing advergames or including brands in a meaningful way. Second, we demonstrate that the design of game objectives should be done in such a way that a regulatory fit is maintained between the construal level and the RF. For example, a promotion focused game objective should be given when the information about the embedded brands are construed at a high level. Alternatively, prevention focused game objectives would work better for brands that are construed at a low level. If these regulatory fits are consciously maintained in advergames, marketers would not only be able to enrich consumers' brand memory, but also enhance their overall subjective game-playing (or flow) experience which, in turn, may affect other cognitive and affective outcomes. Finally, our research provides valuable suggestions to those marketers who want to promote social persuasive messages through advergames. We demonstrate that a regulatory fit between construal level and RF is extremely beneficial when advertisers aspire to promote a large idea though digital games and create a positive impact at a societal level.

Limitations and Future Research

Though the present research provides salient theoretical and practical implications, it has some limitations that can be addressed in future research. First, in all our studies, we considered only the temporal psychological distance and its effects on brand memory. However, extant literary works on the CLT reveal that there are other dimensions of psychological distances such as spatial, social, and hypothetical. Prior research in the domain of advertising also suggests that these dimensions have significant impact on consumer behavior. Therefore, future research should be conducted to examine how the manipulation of other facets of psychological distance in advergames affect consumer behavior. Second, we

only studied the effects of construal levels and RF on consumers' cognition, i.e., brand memory. While such an investigation has critical theoretical and managerial implications discussed above, future research should be conducted to explore the effects of these independent variables on consumers' affective (e.g., brand and game attitude) and conative (e.g., purchase intention) reactions. In fact, research effort can also be given to examine consumers' implicit memory because brand memory can be manifested and measured using explicit (e.g., recall and recognition) and implicit measures (e.g., word completion task). Finally, in our research framework, we did not explore the effects of any potential moderators pertaining to game (e.g., game rhetoric, degree of novelty, 2D versus 3D games, placement proximity, etc.) and brand (e.g., brand familiarity) characteristics. In future, researchers may be interested to examine the moderating effects of some of these characteristics in our research framework that would increase its generalizability.

References

An, S., & Kang, H. (2019). Korean children's understanding of social media advergames: An exploratory study of ad recognition and skeptical attitudes toward advertising. *Journal of Consumer Behaviour*, 18(5), 387-398.

An, S., & Stern, S. (2011). Mitigating the effects of advergames on children. *Journal of Advertising*, 40(1), 43–56.

An, S., Jin, H. S., & Park, E. H. (2014). Children's advertising literacy for advergames: Perception of the game as advertising. *Journal of Advertising*, 43(1), 63-72.

Anderson, M. C. (2003). Rethinking interference theory: Executive control and the mechanisms of forgetting. *Journal of Memory and Language*, 49, 415–445

Ashmore, R. D., & Del Boca, F. K. (1981). Conceptual approaches to stereotypes and stereotyping. In D. L. Hamilton (Ed.), Cognitive processes in stereotyping and intergroup behavior (pp. 1−35). Hillsdale, NJ: Erlbaum.

Breves, P. (2021). Biased by being there: The persuasive impact of spatial presence on cognitive processing. *Computers in Human Behavior*, 119, 106723.

Bordalo, P., Coffman, K., Gennaioli, N., & Shleifer, A. (2016). Stereotypes. *The Quarterly Journal of Economics*, 131(4), 1753-1794.

Cai, R., & Leung, X. Y. (2020). Mindset matters in purchasing online food deliveries during the pandemic: The application of construal level and regulatory focus theories. *International Journal of Hospitality Management*, 91, 102677.

Cauberghe, V., & De Pelsmacker, P. (2010). Advergames. *Journal of Advertising*, *39*(1), 5-18.

Chang, H., Zhang, L., & Xie, G. X. (2015). Message framing in green advertising: The effect of construal level and consumer environmental concern. *International Journal of Advertising*, 34(1), 158-176.

Chiba, A. A., Kesner, R. P., & Gibson, C. J. (1997). Memory for temporal order of new and familiar spatial location sequences: role of the medial prefrontal cortex. *Learning & Memory*, 4(4), 311-317.

Cicchirillo, V., & Mabry, A. (2016). Advergaming and healthy eating involvement. *Internet Research*, 26(3), 587-603.

Chandran, S., & Menon, G. (2004). When a day means more than a year: Effects of temporal framing on judgments of health risk. *Journal of Consumer Research*, *31*(2), 375-389.

Coleman, J. T., Royne, M. B., & Pounders, K. R. (2020). Pride, Guilt, and Self-Regulation in Cause-Related Marketing Advertisements. *Journal of Advertising*, *49*(1), 34-60.

Craik, F. I., & Lockhart, R. S. (1972). Levels of Processing: A Framework for Memory research. *Journal of Verbal Learning and Verbal Behavior*, 11(6), 671-684.

Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational Behavior and Human Decision Processes*, *69*(2), 117-132.

Csikszentmihalyi, M. (1975). Play and Intrinsic Rewards. *Journal of Humanistic Psychology*, 15(3), 41-63.

Csikszentmihalyi, M. (1990). Literacy and intrinsic motivation. *Daedalus*, 115-140.

Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., ... & Wang, Y. (2020). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 102168, doi: https://doi.org/10.1016/j.ijinfomgt.2020.102168

Evans, N. J., Wojdynski, B. W., & Grubbs Hoy, M. (2019). How sponsorship transparency mitigates negative effects of advertising recognition. *International Journal of Advertising*, 38(3), 364-382.

Evans, Nathaniel J., Les Carlson, and Mariea G. Hoy (2013), "Coddling our Kids: Can Parenting Style Affect Attitudes Toward Advergames?" *Journal of Advertising*, 42, 2/3, 228–40.

Fazio, R. H., Powell, M. C., & Williams, C. J. (1989). The role of attitude accessibility in the attitude-to-behavior process. *Journal of Consumer Research*, 16, 280–288.

Förster, J., & Higgins, E. T. (2005). How global versus local perception fits regulatory focus. *Psychological Science, 16*(8), 631-636.

Förster, J., & Higgins, E. T. (2005). How global versus local perception fits regulatory focus. *Psychological science*, *16*(8), 631-636.

Ghosh, T., Sreejesh, S., & Dwivedi, Y. K. (2021). Examining the Deferred Effects of Gaming Platform and Game Speed of Advergames on Memory, Attitude, and Purchase Intention. *Journal of Interactive Marketing*, 55, 52-66.

Ghosh, T. (2016). Winning Versus not Losing: Exploring the Effects of In-Game Advertising Outcome on its Effectiveness. *Journal of Interactive Marketing*, 36, 134-147.

Goh, K. Y., & Ping, J. W. (2014). Engaging consumers with advergames: an experimental evaluation of interactivity, fit and expectancy. *Journal of the Association for Information Systems*, 15(7), 2.

Gross, M. L. (2010). Advergames and the effects of game-product congruity. *Computers in Human Behavior*, 26(6), 1259-1265.

Ham, C. D., Yoon, G., & Nelson, M. R. (2016). The interplay of persuasion inference and flow experience in an entertaining food advergame. *Journal of Consumer Behaviour*, 15(3), 239-250.

He, Y., Chen, Q., & Alden, D. L. (2016). Time will tell: managing post-purchase changes in brand attitude. *Journal of the Academy of Marketing Science*, 44(6), 791-805.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, *52*(12), 1280.

Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In *Advances in experimental social psychology* (Vol. 30, pp. 1-46). Academic Press.

Higgins, E. T. (2006). Value from hedonic experience and engagement. *Psychological Review*, 113(3), 439.

Hilton, J. L., & von Hippel, W. (1996). Stereotypes. *Annual Review of Psychology*, 47, 237−271.

Hong, J., & Lee, A. Y. (2008). Be fit and be strong: Mastering self-regulation through regulatory fit. *Journal of consumer research*, 34(5), 682-695.

Hsu, C. L., & Lu, H. P. (2004). Why do people play on-line games? An extended TAM with social influences and flow experience. *Information & management*, 41(7), 853-868.

Huh, J., Suzuki-Lambrecht, Y., Lueck, J., & Gross, M. (2015). Presentation matters: comparison of cognitive effects of DTC prescription drug advergames, websites, and print ads. *Journal of Advertising*, 44(4), 360-374.

Kannan, P. K., & Li, H. A. (2017). Digital Marketing: A Framework, Review and Research Agenda. *International Journal of Research in Marketing*, 34(1), 22-45.

Kim, D. H., & Sung, Y. (2013). Gucci versus Old Navy: Interplay of brand personality and regulatory focus in advertising persuasion. *Psychology & Marketing*, 30(12), 1076-1087.

Kim, D., & Ko, Y. J. (2019). The Impact of Virtual Reality (VR) Technology on Sport Spectators' Flow Experience and Satisfaction. *Computers in Human Behavior*, 93, 346-356.

Kim, H., & John, D. R. (2008). Consumer response to brand extensions: Construal level as a moderator of the importance of perceived fit. *Journal of consumer psychology*, 18(2), 116-126.

Kim, Y. J., Park, J., & Wyer Jr, R. S. (2009). Effects of temporal distance and memory on consumer judgments. *Journal of Consumer Research*, *36*(4), 634-645.

Kinard, B. R., & Hartman, K. B. (2013). Are you entertained? The impact of brand integration and brand experience in television-related advergames. *Journal of Advertising*, *42*(2-3), 196-203.

La Corte, V., & Piolino, P. (2016). On the Role of Personal semantic memory and temporal distance in episodic future thinking: the TEDIFT model. *Frontiers in human neuroscience*, 10, 385.

Lee, A. Y., Keller, P. A., & Sternthal, B. (2009). Value from regulatory construal fit: The persuasive impact of fit between consumer goals and message concreteness. *Journal of Consumer Research*, *36*(5), 735-747.

Lee, H., Fujita, K., Deng, X., & Unnava, H. R. (2017). The role of temporal distance on the color of future-directed imagery: A construal-level perspective. *Journal of Consumer Research*, *43*(5), 707-725.

Lee, S. Y., Yoo, C. Y., Kim, D. H., & Sung, Y. H. (2020). Distance matters: the effects of self-brand connections and construal levels on ad responses. *International Journal of Advertising*, 1-28.

Liberman, N., & Trope, Y. (1998). The role of feasibility and desirability considerations in near and distant future decisions: A test of temporal construal theory. *Journal of Personality and Social Psychology*, *75*(1), 5-18.

Liberman, N., Sagristano, M. D., & Trope, Y. (2002). The effect of temporal distance on level of mental construal. *Journal of Experimental Social Psychology*, *38*(6), 523-534.

Liberman, N., Trope, Y., & Stephan, E. (2007). Psychological distance. *Social Psychology: Handbook of Basic Principles*, *2*, 353-383.

Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, *83*(4), 854.

MarketsandMarkets (2020). Gamification Market by Component (Solution and Services), Deployment (Cloud and On-premises), Organization Size (SMEs and Large Enterprises), Application, End-User (Enterprise-Driven and Consumer-Driven), Vertical, and Region – Global Forecast to 2025. https://financesonline.com/gamification-statistics/ Accessed on April 04, 2021.

Martin, B. A., Gnoth, J., & Strong, C. (2009). Temporal construal in advertising. *Journal of Advertising*, *38*(3), 5-20.

Mallinckrodt, V., & Mizerski, D. (2007). The effects of playing an advergame on young children's perceptions, preferences, and requests. *Journal of Advertising*, *36*(2), 87-100.

Martin, B. A., Gnoth, J., & Strong, C. (2009). Temporal construal in advertising. *Journal of Advertising*, 38(3), 5-20.

Mishra, S., & Malhotra, G. (2020). The gamification of in-game advertising: Examining the role of psychological ownership and advertisement intrusiveness. *International Journal of Information Management*, 102245, doi: https://doi.org/10.1016/j.ijinfomgt.2020.102245.

Morris, C. D., Bransford, J. D., & Franks, J. J. (1977). Levels of Processing versus Transfer Appropriate Processing. *Journal of Verbal Learning and Verbal Behavior*, 16(5), 519-533.

Neyens, E., Smits, T., & Boyland, E. (2017). Transferring game attitudes to the brand: Persuasion from age 6 to 14. *International Journal of Advertising*, 36(5), 724-742.

Panic, K., Cauberghe, V., & De Pelsmacker, P. (2013). Comparing TV ads and advergames targeting children: the impact of persuasion knowledge on behavioral responses. *Journal of Advertising*, 42(2-3), 264-273.

Park, S. Y., & Morton, C. R. (2015). The role of regulatory focus, social distance, and involvement in anti-high-risk drinking advertising: A construal-level theory perspective. *Journal of Advertising*, 44(4), 338-348.

Pennington, G. L., & Roese, N. J. (2003). Regulatory focus and temporal distance. *Journal of Experimental Social Psychology*, 39(6), 563-576.

Peters, S., & Leshner, G. (2013). Get in the game: The effects of game-product congruity and product placement proximity on game players' processing of brands embedded in advergames. *Journal of Advertising*, 42(2-3), 113-130.

Roy, R., & Ng, S. (2012). Regulatory focus and preference reversal between hedonic and utilitarian consumption. *Journal of Consumer Behaviour*, 11(1), 81-88.

Roy, R., & Phau, I. (2014). Examining regulatory focus in the information processing of imagery and analytical advertisements. *Journal of Advertising*, 43(4), 371-381.

Scholer, A. A., Cornwell, J. F., & Higgins, E. T. (2019). Regulatory focus theory and research. *The Oxford handbook of human motivation*, 47.

Sipilä, J., Herold, K., Tarkiainen, A., & Sundqvist, S. (2017). The influence of word-of-mouth on attitudinal ambivalence during the higher education decision-making process. *Journal of Business Research*, 80, 176-187.

Skadberg, Y. X., & Kimmel, J. R. (2004). Visitors' Flow Experience While Browsing a Web Site: Its Measurement, Contributing Factors and Consequences. *Computers in Human Behavior*, 20(3), 403-422.

Spiller, S. A., Fitzsimons, G. J., Lynch Jr, J. G., & McClelland, G. H. (2013). Spotlights, floodlights, and the magic number zero: Simple effects tests in moderated regression. *Journal of Marketing Research*, *50*(2), 277-288.

Sreejesh, S., & Anusree, M. R. (2017). Effects of cognition demand, mode of interactivity and brand anthropomorphism on gamers' brand attention and memory in advergames. *Computers in Human Behavior*, *70*, 575-588.

Sreejesh, S., Anusree, M. R., & Ponnam, A. (2018). Does game rules work as a game-changer? Analyzing the effect of rule orientation on brand attention and memory in advergames. *Computers in Human Behavior*, *81*, 325-339.

Steffen, C., Mau, G., & Schramm-Klein, H. (2013). Who is the Loser When I Lose the Game? Does Losing an Advergame Have a Negative Impact on the Perception of the Brand? *Journal of Advertising*, 42(2-3), 183-195.

Terlutter, R., & Capella, M. L. (2013). The gamification of advertising: analysis and research directions of in-game advertising, advergames, and advertising in social network games. *Journal of Advertising*, *42*(2-3), 95-112.

Theodorakis, I. G., & Painesis, G. (2018). The Impact of Psychological Distance and Construal Level on Consumers' Responses to Taboos in Advertising. *Journal of Advertising*, 47(2), 161-181.

Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review*, *110*(3), 403.

Trope, Y., Liberman, N., & Wakslak, C. (2007). Construal levels and psychological distance: Effects on representation, prediction, evaluation, and behavior. *Journal of Consumer Psychology*, *17*(2), 83-95.

Unnava, H. R., & Burnkrant, R. E. (1991). An imagery-processing view of the role of pictures in print advertisements. *Journal of Marketing Research*, *28*(2), 226-231.

Vallacher, R. R., & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behavior. *Psychological Review*, 94, 3−15.

van Berlo, Z. M., van Reijmersdal, E. A., & Eisend, M. (2021). The Gamification of Branded Content: A Meta-Analysis of Advergame Effects. Journal of Advertising, 1-18.

van Berlo, Z. M., van Reijmersdal, E. A., & Rozendaal, E. (2020). Adolescents and handheld advertising: The roles of brand familiarity and smartphone attachment in the processing of mobile advergames. *Journal of Consumer Behaviour*, 19(5), 438-449.

Vanwesenbeeck, I., Walrave, M., & Ponnet, K. (2017). Children and advergames: the role of product involvement, prior brand attitude, persuasion knowledge and game attitude in purchase intentions and changing attitudes. *International Journal of Advertising*, 36(4), 520-541.

Waiguny, M. K. J., & Terlutter, R. (2011). Differences in children's processing of advergames and TV commercials. In S. Okazaki (Ed.), Advances in advertising research (Vol. 2, pp. 35–51). Wiesbaden, Germany: Gabler.

Waiguny, M. K., Nelson, M. R., & Terlutter, R. (2012). Entertainment matters! The relationship between challenge and persuasiveness of an advergame for children. *Journal of Marketing Communications*, 18(1), 69-89.

Yang, Y., Asaad, Y., & Dwivedi, Y.K. (2017). Examining the impact of gamification on intention of engagement and brand attitude in the marketing context. *Computers in Human Behavior*, 73, 459-469.

Yeu, M., Yoon, H. S., Taylor, C. R., & Lee, D. H. (2013). Are banner advertisements in online games effective? *Journal of Advertising*, 42(2-3), 241-250.

Zhao, G., & Pechmann, C. (2007). The impact of regulatory focus on adolescents' response to antismoking advertising campaigns. *Journal of Marketing Research*, 44(4), 671-687.

Table 1: Summary Review of the Literature on Information Processing in Advergames from 2010-2020

Author(s), Year	Independent Variables	Dependent Variables	Game and Sample	Major Findings
Cauberghe & De Pelsmacker (2010)	Prominence of the placement, product involvement, game repetition	Brand recall, brand attitude	Advergame "*Snag*"; Adults and students, n = 480	Game repetition negatively affected brand attitude but not brand recall. Prominently placed brand was better recalled.
Gross (2010)	Product-game congruency, prior game-playing experience	Explicit and implicit memory, long-term memory, brand attitude	Advergame "*Oreo Marble Shooter*" (trivia game, low congruency", advergame "*Oreo Race for the Stuff*" (sports game, high congruency): Students, n = 47	Advergame with high product-game congruency led to better explicit and implicit memory than that with low product-game congruency. Brand attitude was higher for the incongruent scenario. Game-playing experience did not affect memory or attitude.
Waiguny & Terlutter (2011)	TV advertisement versus advergame, time, identification of the commercial nature	Liking the advergame, brand attitude, game recommendation intention, intention to re-play the game, brand choice, pester intention	Advergame "*Nesquick Duo*", Children between 8 and 10 years, n = 51	Children who watched the commercial in a TV compared to the advergame were less entertained and eventually exhibited less favourability toward all the dependent variables. Identifying an advergame as a commercial tool did not negatively affect the dependent variables while for TV advertisement, negative effects prevailed. Longer game-playing duration positively affected game recommendation, brand attitude, and brand choice.
An & Stern (2011)	Ad break in an advergame: verbal, auditory	Persuasion knowledge, brand recall, brand preference	Advergame "*Be a Popstar*" from Kraft foods; Children between 8 and 11 years, n = 112	Ad break did not affect persuasion knowledge but decreased brand recall and brand preference.
Waiguny, Nelson, & Terlutter (2012)	Game challenge, persuasion knowledge	Brand attitude	Advergame "*Garden Quest*" from Nesquik; Children aged between 7 and 10 years, n = 101	When the level of game challenge was optimal, children had the most favourable brand attitude. Similarly, their brand attitude was the least favorable when the game was underchallenging in nature. Game challenge and persuasion knowledge interacted in such a way that children developed least favourable brand attitude when they identified the persuasive intent of an underchallenging advergame.
Kinard & Hartman (2013)	Brand-game integration, brand experience	Game attitude, brand attitude, behavioural intention	Following advergames were used: A&E's Billy the Exterminator "*Catch Them If You Can*," TLC's Cake Boss "*Delivery Dash*," A&E's Parking Wars "*Parking Warrior*," and Discovery Channel's River Monsters "*Fish On*"; Students and non-students, n = 326	Changes in behavioral intention was observed among those individuals who had no prior brand experience. A game with high brand-game integration resulted in more negative game attitude than a game with a low level of integration.

Panic, Cauberghe, & De Pelsmacker (2013)	TV advertisement versus advergame, game attitude Mediating Variable: Persuasion knowledge	Purchase request	Advergame "*Lay's*"; Children between 7 and 10 years, n = 382	Children playing the advergame demonstrated lower persuasion knowledge than those who were exposed to the same brand through a TV advertisement. Children's persuasion knowledge had more negative effect on their purchase request about the advertised brand in the TV advertisement condition than the advergaming condition. Finally, the attitude toward the advertising format had a more positive effect on the purchase request for the latter, as compared to, the former condition.
Peters & Leshner, (2013)	Game-product congruity, product placement proximity	Explicit memory, implicit memory, brand attitude, game enjoyment, game playing intention	Advergame was developed for the research purpose by developers such as Blockdot, Kewlbox, and Addictinggames.com; Students, n = 90	Players' implicit brand memory were positively affected only by the congruent game. Also, a congruent game with central placement (i.e., brand shown in the central part of the computer screen) positively affected explicit brand memory. Incongruent games with peripheral placement (i.e., brands shown in the side portions of the computer screen) positively affected brand attitude, game enjoyment, and game playing intention.
Yeu, Yoon, Taylor, & Lee (2013)	Brand exposure, achievement level, pre-attentiveness toward the brand	Explicit memory, implicit memory,	Advergame was developed for the research purpose; Students, n = 122	Gamers exposed to the brands with low levels of attention showed higher explicit and implicit memory than those who were not exposed. Gamers having high achievement level in the advergame had better implicit memory than those with low achievement level.
An, Jin, & Park (2014)	Advertising literacy Mediating Variable: Perception of the game as an advertising	Advertising scepticism	Advergame for a well-known ice cream brand in Korea; Children in second and third grade, n = 129	Children without advertising literacy did not perceive an advergame as a form of advertising. Also, those children who perceived the advergame as an advertising developed more scepticism toward it.
Goh & Ping (2014)	Interactivity, fit, expectancy Mediating Variable (sequential mediation): Game attitude, brand attitude	Purchase intention	A car-racing advergame was developed for the research purpose; Students, n = 121	In a high fit condition, low expectancy and high interactivity led to positive game attitude. In the low interactivity situation, low expectancy resulted in positive game attitude. Interactivity and game attitude positively affected brand attitude which further generated positive purchase intention.
Huh, Suzuki-Lambrecht, Lueck, & Gross, (2015)	Print advertisement versus advergame	Brand recall and recognition, memory about information in the advergame	Advergame for a medicine brand was developed for the research purpose; Adults, n = 147	Adults who were exposed to the brands in the advergame had better brand recall and stronger memory of the information that those exposed to the print advertisement.
Cicchirillo & Mabry (2016)	Brand integration in the advergame, healthy eating involvement	Brand attitude, game attitude	Advergame was developed for the research purpose Students, n = 223	Individuals exposed to a condition of high game-brand integration with a high level of involvement had negative game and brand attitude. A low level of game-brand

				integration and involvement led to positive evaluations of game and the brand.
Neyens, Smits, & Boyland (2017)	TV advertisement versus advergame Mediating Variable: Persuasion knowledge, Attitude toward the advertising format	Brand recognition, brand attitude, pester intention	Advergame "*Mission Jungle 2*" from Kellogg's Coco-Pops; Children aged between 6 and 14 years, n = 940	Children playing the game had more favourable brand attitude and pester intention than the TV-viewing children. Their attitude toward the advertising format mediated the effect of the format on pester intention while persuasion knowledge did not function as a mediator. Recognition also did not vary across the advertising formats.
Vanwesenbeeck, Walrave, & Ponnet (2017)	Product involvement, prior brand evaluation, persuasion knowledge, game attitude	Brand attitude change, purchase intention	Advergame was developed for the research purpose; Children between 10 and 12 years, n = 279	Product involvement and persuasion knowledge did not affect brand attitude change and purchase intention while prior brand evaluation did. Also, a positively-evaluated advergame led positive attitudinal changes and favourable purchase intention of the advertised brands.
An & Kang, 2019	Age	Recognition of the commercial intent in advergames, scepticism toward the advertising	Advergame promoting a national coffee chain café called "C*offee Bene*"; Children between 7 and 11 years, n = 556	Older children recognized the commercial intent of the advergame and had more scepticism toward the advertising than younger children
Evans, Wojdynski, & Hoy (2019)	Covertness of advertising: advergame, online video commercial Mediating Variable: Advertising recognition	Attitude toward advertising, brand attitude, purchase intention	Advergames such as "*Star Wars Hyperspace Dash*" from Kraft Foods, "*The Lost Minis*" from M & M's, "*Motherboard Mayhem*" from Asus, "*Youland*" from Old Spice, "*Crazy Escape*" from KFC and two other advergames from Progressive Insurance and American Movie Classics; Adults, n = 179	Advergames generated less advertising recognition than online video commercials. Advertising recognition negatively mediates the relationship between advertising covertness and the dependent variables.
van Berlo, van Reijmersdal, & Rozendaal (2020)	Brand familiarity, smartphone attachment Mediating Variable: recognition of commercial intent	Brand recognition, brand attitude, purchase intention	Advergame was developed for the research purpose; Adolescents between 13 and 18 years, n = 98	Consumers recognized the commercial intent of advergames that included familiar brands. Smartphone attachment moderated the relationship between the afore-mentioned variables. Interestingly, no relationship was established between recognition of commercial intent and the dependent variables.

Table 2: Mean, S.D and Correlations [Study 1]

Construal		Memory	Prevention	Promotion
High construal (0)	Memory	**2.97[.372]**		
	Prevention	-.072 (.586)	**4.11[.420]**	
	Promotion	.763** (.000)	-.318* (.013)	**4.25[.372]**
Low construal (1)	Memory	**4.05[.474]**		
	Prevention	.853** (.000)	**4.19[.475]**	
	Promotion	-.109 (.407)	-.286* (.027)	**4.17[.434]**

Note: *** & * shows significant at the 0.01 and 0.05 levels respectively (2-tailed). Values in the off-diagonal shows correlations along with p values in the parenthesis. Values in the diagonal shows the means along with S.D in the square brackets.*

Table 3: Conditional effect of focal predictor at values of the moderator (prevention)

Prevention	Effect	se	t	p	LLCI	ULCI
3.1414	0.1268	0.1446	0.8765	0.3826	-0.1597	0.4132
3.2531	0.229	0.1313	1.744	0.0838	-0.0311	0.4891
3.2802	0.2538	0.1281	1.9806	0.05	0	0.5075
3.3648	0.3312	0.1183	2.7997	0.006	0.0969	0.5655
3.4766	0.4334	0.1058	4.0985	0.000	0.224	0.6429
3.5883	0.5357	0.0938	5.7084	0.000	0.3498	0.7215
3.70	0.6379	0.0828	7.7017	0.000	0.4738	0.8019
3.8117	0.7401	0.0731	10.1211	0.000	0.5953	0.8849
3.9235	0.8423	0.0653	12.8936	0.000	0.7129	0.9717
4.0352	0.9446	0.0602	15.6953	0.000	0.8254	1.0638
4.1469	1.0468	0.0584	17.9294	0.000	0.9311	1.1624
4.2587	1.149	0.0602	19.0743	0.000	1.0297	1.2683
4.3704	1.2512	0.0654	19.1216	0.000	1.1216	1.3808
4.4821	1.3535	0.0733	18.4729	0.000	1.2083	1.4986
4.5939	1.4557	0.083	17.5402	0.000	1.2913	1.6201
4.7056	1.5579	0.094	16.5697	0.000	1.3717	1.7441
4.8173	1.6601	0.106	15.6688	0.000	1.4503	1.87
4.929	1.7624	0.1185	14.871	0.000	1.5276	1.9971

Note: Value which is in bold indicates that prevention orientation significantly works as a moderator when it is equal to or above 3.36. Higher prevention orientation, higher the differential effect of low construal (vs. high) on the outcome.

Table 4: Conditional effect of focal predictor at values of the moderator (Promotion)

Promotion	Effect	se	t	p	LLCI	ULCI
3.375	-1.845	0.162	-11.387	0.000	-2.166	-1.524
3.469	-1.763	0.148	-11.949	0.000	-2.055	-1.471
3.562	-1.680	0.133	-12.596	0.000	-1.945	-1.416
3.656	-1.598	0.120	-13.337	0.000	-1.835	-1.361
3.749	-1.516	0.107	-14.167	0.000	-1.728	-1.304
3.842	-1.433	0.095	-15.057	0.000	-1.622	-1.245
3.936	-1.351	0.085	-15.915	0.000	-1.519	-1.183
4.029	-1.269	0.077	-16.548	0.000	-1.420	-1.117
4.123	-1.186	0.071	-16.650	0.000	-1.327	-1.045
4.216	-1.104	0.069	-15.928	0.000	-1.241	-0.967
4.309	-1.021	0.071	-14.363	0.000	-1.162	-0.881
4.403	-0.939	0.076	-12.288	0.000	-1.090	-0.788
4.496	-0.857	0.085	-10.131	0.000	-1.024	-0.689
4.590	-0.774	0.095	-8.167	0.000	-0.962	-0.586
4.683	-0.692	0.107	-6.493	0.000	-0.903	-0.481
4.776	-0.609	0.119	-5.106	0.000	-0.846	-0.373
4.870	-0.527	0.133	-3.965	0.000	-0.790	-0.264
4.963	-0.445	0.147	-3.025	0.003	-0.736	-0.154

Note: Higher the promotion orientation, higher the differential effect of high construal (vs. low construal) on the outcome

Table 5: Analysis Results [Study 2]

Effect	Construal	RF	Construal *RF	
Main and Interaction	72.589(1,128) $p < 0.01$	9.413(1,128) $p < 0.01$	40.873(1,128) $p < 0.01$	
			Mean (S.D)	Contrast Test
Simple Effects	High	Prevention	1.66 (.21)	F = 39.38, $p < 0.01$
		Promotion	2.95 (.27)	
	Low	Prevention	3.90 (.37)	F = 6.402, $p < 0.01$
		Promotion	3.50 (.39)	

Table 6: Descriptive statistics and correlations [Study 3]

RF	Construal	Mediator/DV	Correlation	Mean	S.D
Promotion	High	Flow		3.5634	.170
		Memory	.431**	3.7365	.171
	Low	Flow		3.1152	.184
		Memory	.373**	3.4153	.178
Prevention	High	Flow		3.0481	.197
		Memory	.286*	3.4037	.198
	Low	Flow		4.3142	.200
		Memory	.812**	4.5920	.213

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

Table 7: Analysis results [Study 3]

Model 1: Dependent variable: Flow experience					
	Coeff	S.E	t	LLCI	ULCI
constant	3.5634*	0.0243	146.3556	3.5155	3.6114
Construal	-0.4483*	0.0344	-13.0183	-0.5161	-0.3804
RF	-0.5153*	0.0344	-14.966	-0.5832	-0.4475
Construal × RF	1.7143*	0.0487	35.2048	1.6184	1.8103
Conditional effect of RF on flow experience					
RF	Effect		t		LLCI
Promotion	-0.4483	0.0344	-13.0183	-0.5161	-0.3804
Prevention	1.2661	0.0344	36.7688	1.1982	1.3339
Model 2: Dependent variable: Memory					
	Coeff	S.E	t	LLCI	ULCI
constant	0.7*	0.0836	8.3688	0.5352	0.8647
Construal	0.0786*	0.0266	2.9498	0.0261	0.1311
Flow experience	0.8682*	0.0247	35.0851	0.8195	0.917
Indirect effect of Construal × RF through flow experience					
RF	Effect	Boot-S.E		BootLLCI	BootULCI
Promotion	-0.3892	0.0276		-0.4442	-0.3353
Prevention	1.0992	0.0410		1.0192	1.1784
Index of moderated mediation					
	Index	Boot-S.E		BootLLCI	BootULCI
	1.4884	0.0506		1.3895	1.5849

*Note: * shows significant at 5% level.*

Figure 1a: Construal × Prevention Orientation Interaction [Study1]

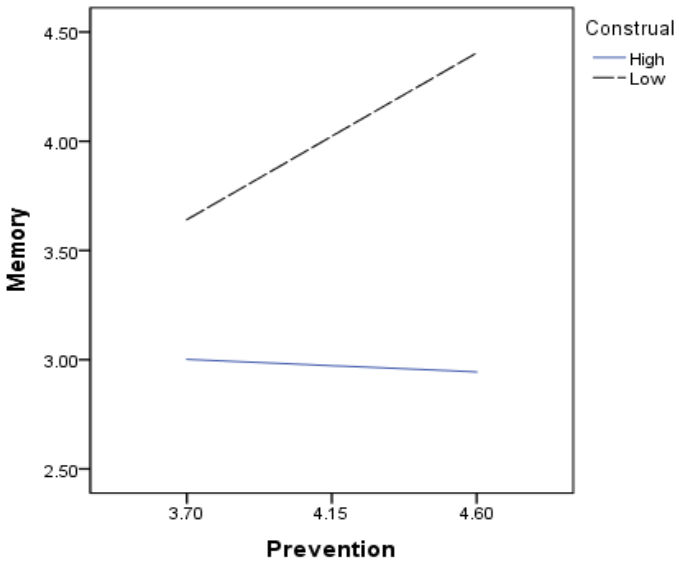

Figure 1b: Construal × Promotion Orientation Interaction [Study1]