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The Effect of Emotional Certainty on Attitudes in Advertising

Sang Yong Bok*

Dongwon Min**

It is a well-established theory that emotion is influential in cognitive processing. Extensive prior research on emotion has shown that emotional factors, such as affect, mood, and feeling, play as information indicating whether he or she has enough knowledge. Most of their findings focused on the effect of emotional valence (i.e., one's subjective positivity or negativity related with the emotion). Recently, several studies on emotion suggest that there is another dimension of emotion, which affects the type of cognitive processing. The studies argue that emotional certainty facilitates heuristic processing, whereas emotional uncertainty promotes systematic processing. Based on the findings, current study examines the effect of certainty on attitudes and recall. Specifically, the authors investigate the effect of certainty on how much effort individuals use to process advertising information and how certainty affects attitude formation toward the advertised product. The authors also focus on recall to clarify the working mechanism of certainty on attitudes, because recall performance reflects the depth of information processing. Based on previous findings, the authors hypothesize that uncertainty (vs. certainty) leads to more favorable attitudes as well as better recall, and conduct an experiment using a fictitious advertisement with 218 participants. The results confirm the predicted effects of certainty only on attitudes not recall. A possible explanation of this discrepancy between attitudes and recall lies in the measurement method, unaided recall. To rule out this possibility, the authors perform an additional analysis with the participants who recall any correct information of the target advertisement. The results show certainty has a negative effect on both attitudes and recall. A bootstrapping test reveals that recall mediates the effect of certainty on attitudes. This result confirms that certainty decreases elaboration, which in turn leads to less favorable attitudes relative to uncertainty. Additionally, our data shows the association among certainty, recall, and attitudes by showing the indirect effect of certainty on attitudes via recall. This research encourages practitioners in the field to emphasize that they should focus on target audiences' emotional certainty before they provide the persuasive message, by showing that uncertainty promotes effortful processing, which in turn leads to better memory and more favorable attitudes.

Key words: Emotion, Emotional Certainty, Emotional Valence, Attitudes, Recall

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I. Introduction

Numerous studies have examined the effect of emotional variables such as affect, mood, and feeling and shown that the emotional variables are quite influential on consumer behavior. Most of them has investigated the effect of emotional valence on information processing (Briñol and Petty 2007; Dash and Davey 2011; Herr et al. 2012; Wiltermuth and Tiedens 2011) based on cognitive capacity, motivation, or mood as input perspectives. One of the most influential theories, which explain the effect of emotion on one's behavior, is feeling-as-information (Schwarz 2010). The gist of feeling-as-information theory is that the emotional valence biases the amount of cognitive resources invested in information processing. Related studies demonstrate that people in a negative affective state are inclined to perform more systematic processing than they do when they are in a positive affective state (e.g., Batra and Stayman 1990). Theories based on embodied cognition have also demonstrated that when individuals process emotion-associated information, their neural states re-activate via generating their prior perceptual and affective experiences, which in turn their cognitive processing is affected (Barsalou 2008; Hawk, Fischer, and van Kleef 2012; Lee and Min 2010). This indicates that emotional valence acts on the allocation mechanism of cognitive resources and serves as a basis for the

interpretation of messages. However, for the past two decades, some researchers have found inconsistency in processing styles among same affective states (Bodenhausen, Sheppard, and Kramer 1994; Lerner, Goldberg, and Tetlock 1998) suggesting that emotional valence approach is not sufficient to explain such phenomena. In fact, emotion has more meaningful sub-dimensions such as certainty, responsibility, control, motivation, and pleasantness (e.g., Smith and Ellsworth 1985). Among these dimensions, certainty is considered as an important dimension inasmuch as various literature indicates that certainty is related to information processing (Edwards and Weary 1993; Grant and Tybout 2008; Weary and Jacobson 1997; Tiedens and Linton 2001). In this paper, we focus on certainty that shed new light on understanding information processing.

Feeling certain is accompanied by characteristics such as predictability of what will happen next, while feeling uncertain is associated with not knowing about the current situation and unpredictability (Ellsworth and Smith 1988). Related literature shows that certainty not only affects the information processing style (Edwards and Weary 1993; Min and Kim forthcoming; Weary and Jacobson 1997) but acts as a basis to process a subsequent event (Tiedens and Linton 2001). Specifically, Tiedens and Linton (2001) show the effect of certainty and emotional valence on stereotyping and the results indicate that certainty affects the tendency to

use cognitive resources while emotional valence does not. Although their work provides evidence that certainty influences information processing, little attention has been given to its significance from marketing perspectives. In the same context, Grant and Tybout (2008) demonstrate that uncertainty encourages comprehensive use of information. The goal of this research is to explore the effects of certainty on attitudes. In this regard, this research also examines the relationship between attitudes and recall to further understand the dynamics of attitudes formation. Previous findings show that valence has no significant effect on cognitive efforts, but considering that attitudes are the outcome of positive or negative cognitive evaluation, emotional valence possibly shows different patterns on attitudes. Therefore, in addition, this research investigates whether emotional valence has an influence on attitudes.

II. Theoretical Background

2.1 Effect of Emotion on Information Processing

Consumers depend on tangible facts as well as intangible facts to process given information (e.g., Hwang and Na 2002). Emotional state at the time of information processing has a significant impact on processing styles: system-

atic processing (effortful) vs. heuristic (less effortful) processing. How emotion affects information processing can be viewed by three types of cognitive processes: associative process, interpretive process, and salience of mood-congruence materials (Bower 1981). First, associative process is based on network theory and explains that given stimuli prime nodes associated with the current emotional state of a subject facilitating stronger connections to the activated nodes. This process can be illustrated by the learning and retrieval processes. In the learning process, existing nodes that closely match the emotional valence at the time of learning are primed and used for encoding. Likewise, in the retrieval process, retrieval fluency becomes higher when the emotion at the time of retrieval matches the emotional valence at the time of encoding (Tulving and Thomson 1973). This illustrates that emotional valence influences the subsequent information processing and cues the activation of memory.

Second, interpretive process states that the current affective state serves as a basis of interpretation of given stimuli. According to this view, affective state activates memory and the ambiguity of information is resolved based on the activated memory. For example, Mayer, McCormick, and Strong (1995) showed that happy people tend to recall better for happy events than sad people do, and in the same vein, Caballero and Moreno (1992) showed that individuals perform better for memory and words

recall that match the emotional state of individuals at the time of experiment. These findings suggest that emotional valence primes corresponding memory followed by the activation of associative elaboration, which in turn influences processing fluency (Winkielman et al. 2003). Moreover, processing fluency facilitates the pleasantness of experience (Winkielman and Cacioppo 2001) and the resulting feeling of fluency signals familiarity, prototypicality, and cognitive progress that serve as a basis of judgment (Winkielman et al. 2003). A representative example which demonstrates the function of fluency is the availability heuristics (Tversky and Kahneman 1973). According to the availability heuristics, the basis of judgment of a specific event depends on subjective feelings rather than objective facts.

Finally, salience of mood-congruence material explains that the degree of mood-congruence influences both retrieval and processing fluency. Previous studies on emotional valence and recall (Caballero and Moreno 1992; Watkins et al. 1992) showed that higher recall is observed when the tone of message resembles with the emotion of subjects. Furthermore, Forgas and Bower (1987) revealed that subjects' emotional valence plays an important role in person-perception judgment task. These findings show that current emotional valence increases the salience of mood-congruent-memory and activates related associative elaboration affecting fluency (Winkielman et al. 2003).

There has been a vast amount of studies showing the effect of emotional valence on information processing (Young et al. 2011; Winterich, Han, and Lerner 2010). Related literature demonstrated that positive emotional valence leads to more heuristic processing (Baas, De Dreu, and Nijstad 2012; Mackie and Worth 1991) and that negative emotional valence encourages people to use more elaboration efforts in information processing (Bless et al. 1990; Young et al. 2011). In addition, Winterich, Han, and Lerner (2010) showed that a prior emotion can blunt a subsequent emotion, suggesting that a single emotional experience can have influences on subsequent judgments. All of these prior findings indicate that the affective state at the time of judgment influences the usage of cognitive resources and suggest that people sense negative affective state as a threat that may hinder goal achievement so more cognitive efforts are required for judgment while positive valence is considered as a signal that a current situation is safe and current knowledge is enough (Bless, et al. 1996; Garcia-Marques et al. 2004; Schwarz and Clore 1983). In sum, when people are in a negative emotional valence, they tend to engage in more systematic processing than they do when they are in a positive emotional valence (e.g., Batra and Stayman 1990).

However, there is much in literature showing inconsistency in processing styles among emotions with same valence (Bodenhausen, Sheppard, and Kramer 1994; Lerner, Goldberg, and Tetlock

1998). For example, although sadness and anger are the emotions with negative emotional valence, sadness promotes more systematic processing while anger encourages more heuristic processing (Bodenhausen, Sheppard, and Kramer 1994). Emotional valence approach cannot reconcile this phenomenon, and this indicates that emotion should be looked at from different dimensions. According to appraisal theorists, emotions have more meaningful sub-dimensions that go beyond just a simple negative-positive continuum. Among these dimensions, a growing body of literature suggests that certainty has a crucial impact on information processing (Edwards and Weary 1983; Grant and Tybout 2008; Weary and Jacobson 1997) and recent studies demonstrated that certainty provides legitimate explanations for the relationship between emotions and the usage of cognitive resources (Grant and Tybout 2008; Tiedens and Linton 2001).

2.2 Certainty and Information Processing

Certainty attracted attention from researchers because it has characteristics pertaining to information processing styles (Baas, De Dreu, and Nijstad 2012; Bagneux, Bollon, Dantzer 2012; Grant and Tybout 2008; Min and Kim forthcoming) and has interesting properties such as predictability of what will happen next and associated with not knowing about the current situation (Ellsworth et al. 1988; Smith and

Ellsworth 1985). Weary and Jacobson (1997) showed that individuals who feel chronic uncertainty tend to pay more elaboration efforts than those who feel chronic certainty. Other studies in the same context demonstrated that depressed individuals exercise more cognitive efforts due to the feeling of lack of certainty (Edwards and Weary 1993; Gleicher and Weary 1991). These findings can be examined by the sufficiency-threshold hypothesis (Chaiken, Liberman, and Eagly 1989). The sufficiency-threshold hypothesis contended that individuals would put efforts to process information up to the point where their actual confidence levels meet or surpass a sufficient threshold of confidence. According to this theory, people feeling uncertain incline to process information with more efforts since the difference between their perceived level of certainty and their desired level of certainty is larger than those who are feeling certain. From the sufficiency-threshold hypothesis perspective, recent research reveals the effect of certainty on information processing by showing that uncertainty encourages more structured ideation (Baas, De Dreu, and Nijstad 2012), comprehensive use of information (Grant and Tybout 2008) and stereotyping (Tiedens and Linton 2001). These findings illustrate that individuals in the uncertainty condition has a bigger gap between a desired sufficiency threshold level and an actual perceived sufficiency threshold level than those who are in the certainty condition and therefore tend to

put more efforts to minimize the gap. Furthermore, based on the Appraisal Tendency Framework (ATF: Lerner and Keltner 2000, 2001; Lerner and Tiedens 2006), Han, Lerner, and Keltner (2007) demonstrated that certainty associated with an emotion could spill over to subsequent judgments.

As certainty is an important dimension of emotion, attitudes are important in marketing because it is a good predictor of consumer behavior. ELM (Elaboration Likelihood Model) and HSM (Heuristic and Systematic Model) are the exemplars of dual-processing models that are quite influential in understanding the general process from message reception and interpretation to attitude formation and change. According to the dual-processing models, when individuals are able and motivated, they tend to process information more thoroughly, which in turn leads to better memory (Anderson and Reder 1992). On the contrary, when the level of motivation is low, people are most likely to focus on peripheral cues (e.g., familiarity) or heuristics (e.g., past experiences) in forming attitudinal responses. Attitude formation can occur via both effortful and less effortful processing, but the attitudes formed via thorough processing are more stable and more likely to drive behavior (e.g., Holland, Verplanken, and Kippenberg 2002).

In this research, the primary objective is to examine the effect of certainty on attitudes. Prior findings showed that uncertainty fosters

systematic processing by examining the effect of certainty on information processing, such as stereotyping (e.g., Tiedens and Linton 2002). However, in the same condition, those findings showed that the effect of valence is not significant. We suggest a possibility that the effect of certainty on stereotyping and attitudes are different, because valence is strongly associated with attitudes, which are the consequence of positive or negative evaluation. To rule out the possible explanation, we examined the effect of valence on attitudes as well. Furthermore, we used recall as another target variable to analyze the relationship between attitudes and recall. Recall is an index reflecting the depth of information processing (Anderson and Reder 1979). Therefore, if the attitudes formation indeed occurs via effortful processing, favorable attitudes would accompany better recall. Taken together, we propose the following hypotheses:

- H1: Participants who are in the uncertainty condition (hope, fear) express more favorable attitudes toward a product advertisement than those who are in the certainty condition (happy, disgust).*
- H2: Participants in the uncertainty condition (happy, disgust) are better in recall performance than those who are in the certainty condition (hope, fear).*
- H3: The effects of valence on attitudes and recall are not significant.*

III. Experiment

3.1 Methods

3.1.1 Participants

Two-hundred thirty-five undergraduate students participated in the experiment. They were introduced that this experiment was about the advertising effectiveness of a new product. We used a 2 (certainty: high vs. low) \times 2 (valence: positive vs. negative) analysis of variance (ANOVA) between-subjects design resulting in four conditions, happy (high vs. positive), hope (low vs. positive), disgust (high vs. negative), and fear (low vs. negative). Seventeen incomplete responses were removed from the data analysis and the remaining two-hundred eighteen (97 men and 121 women) responses were used for analysis.

3.1.2 Stimuli Development

Advertising stimuli were developed by modifying professional quality printed magazine advertisements published and distributed in both the UK and USA in 2012. The three advertisements were carefully selected and modified so that the contents do not have a well-known figure to control the endorsement effect and have salience in product attributes. Only product attributes and messages in English

were translated into Korean to maintain a professional and genuine look of the original advertisements. One of three modified advertisements was used as a target advertisement. To control the effect of involvement, running shoes were selected as a target product which is believed to be neutral in involvement and an unknown brand, KINVARA was chosen to administer the effect of brand familiarity on other variables in this experiment (for target advertisement, see Appendix).

3.1.3 Procedure

Participants were explained that the experiment was to study the effectiveness of new advertisements of products that will be introduced in Korean market in a near future, and after that, a questionnaire book was distributed. The questionnaire started with emotion induction by asking participants to write an autobiographical essay about an emotional event. The instruction for the essay writing was adopted and modified from Smith and Ellsworth (1985)'s appraisal questionnaire. As an example, instructions for the participants to recall a happy experience were told: "Please recall the past experience where you felt happy. Try to remember as vividly as possible so that you can describe what was happening, what made you feel happy, and what you did when you felt happy." Instructions for the remaining three other conditions were exactly same except "happy"

is replaced with hope, sad, and disgust depending on manipulation conditions.

After essay writing, we assessed the degree of perceived certainty and pleasantness. For certainty, participants rated the degree by answering three questions: how well they understood what was happening, how certain they were to predict what would happen next, and how uncertain they were what was happening. The items ($\alpha = .73$) were measured in a 7-point scale ranging from 1 to 7 and the last item was reverse scored and the average value of these items was used as a perceived certainty index. To acquire the valence, two questions were asked as follows: "How unpleasant was it to be in the situation you wrote about?" and "How enjoyable was it to be in the situation you wrote about?" These two items ($\alpha = .76$) were measured in 7-point scale ranging from 1 to 7 and the first item was reverse scored and the average value was used as a pleasantness index. The perceived certainty index and the pleasantness index were used for manipulation check.

Next, participants were exposed to three advertisements. To remove order effect, target advertisement was placed in the middle. There was no restriction on the amount of time to spend per advertisement and participants were instructed to move on at self-paced speed. Prior to measuring attitudes, recall was measured to assess the depth of information processing. We used unaided recall and participants were asked

to write down freely anything they could remember related to the three advertisements. Participants' recall were coded (1 = correct recall; 0.5 = partial recall; 0 = no recall) and summed to constitute a recall index. After recall assessment, attitudes were measured by using a three-item scale used from the previous literature (Min, Kim, and Hyun 2010). We asked participants to rate their overall impression towards the target advertisement and all three items were measured in a 7-point scale anchored at 1 to 7 (bad - good, unsatisfactory - satisfactory, unfavorable - favorable). The reliability of these items were high ($\alpha = .91$), hence they were averaged and constituted an attitudes index. Although running shoes were believed to be neutral in terms of involvement, to control the effect of involvement on attitudes and recall, individuals' involvement regarding the target advertisement was measured. Involvement was measured with Lee (1990)'s 12-item involvement scale, which is a modified version of PII (Zaichkowsky 1985) and made applicable for Korean. Analysis results showed that neither main nor any interaction effects were significant ($F_s < 1$). To control the effect of prior brand knowledge to attitudes, prior knowledge about target brand was measured. No participants indicated having the awareness of the brand. Finally, miscellaneous items such as gender and age were answered. Since these control variables did not produce any significant effects, these variables

are not discussed further.

3.2 Results

3.2.1 Manipulation checks

For the certainty manipulation check and the pleasantness manipulation check, a 2 (certainty: high vs. low) \times 2 (valence: positive vs. negative) MANOVA was used. The analysis on the certainty showed a main effect. Participants who were under the certainty condition assessed their autobiographical event more certain than those who were under the uncertainty condition ($M_{\text{certain}} = 4.78$, $SD = 1.06$ vs. $M_{\text{uncertain}} = 4.43$, $SD = 1.20$; $F(1, 214) = 4.21$, $p < .05$). For pleasantness, a main effect of valence was significant. The positive emotions resulted in more pleasant feeling than did the negative emotions ($M_{\text{positive}} = 5.38$, $SD = 1.65$ vs. $M_{\text{negative}} = 2.80$, $SD = 1.26$; $F(1, 214) = 172.97$, $p < .001$).

3.2.2 Attitudes

The present study hypothesized that participants in the uncertainty condition will show

more favorable attitudes in processing the advertised product information than those who are in the certainty condition. A 2 (certainty) \times 2 (valence) ANOVA results showed the predicted main effect of certainty on attitudes. Specifically, participants feeling uncertain responded to have more favorable attitudes than those who feeling certain ($M_{\text{certain}} = 3.94$, $SD = 1.17$ vs. $M_{\text{uncertain}} = 4.38$, $SD = 1.23$; $F(1, 214) = 7.38$, $p < .01$). This result indicates that individuals feeling uncertain are prone to do more elaboration in processing information than those who feeling certain, which in turn leads them to perceive the advertising message as more persuasive. Hence, the proposed hypothesis was supported, see Table 1 and Figure 1. Neither main effect of valence nor any other interaction effects were significant ($F_s < 1$).

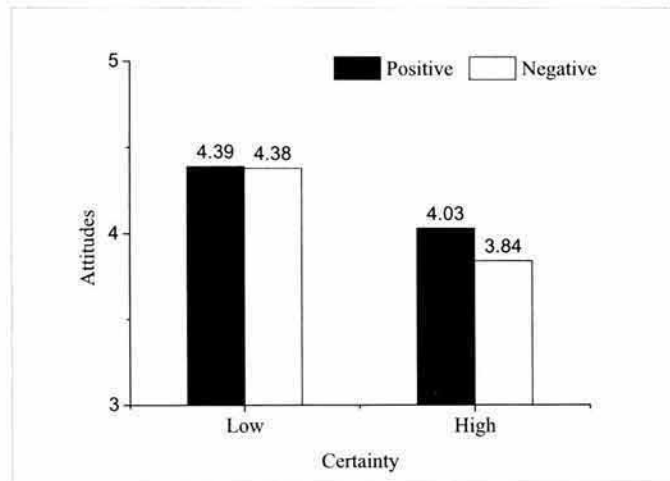
3.2.3 Recall

To further understand the dynamics of attitudes formation, a 2 (certainty) \times 2 (valence) ANOVA on recall was performed. Analysis showed that the main effect of certainty on recall was not significant ($F < 1$) while the effect of valence was marginally significant (M_{positive}

<Table 1> The effect of certainty and valence on attitudes

Independent Variables	F	p-value
Certainty	7.38	.01
Valence	.37	.54
Certainty \times Valence	.30	.58

〈Figure 1〉 The effect of certainty and valence on attitudes



= .92, SD = .77 vs. $M_{\text{negative}} = .75$, SD = .77; $F(1, 214) = 3.00$, $p < .10$, see Table 2. We hypothesized that participants in the uncertainty condition will show both more favorable attitudes and better recall than those in the certainty condition, but the results failed to meet our prediction. For a recall measure, we adopted unaided recall, which is quite a difficult memory task. Since the recall performance depends on the depth of information processing (Anderson and Reder 1979), we suspected that the difficulty of the measurement method may be a possible cause of this discrepancy. To explore this possibility, we conducted an additional analysis for attitudes and recall with the

participants who recalled any correct information of the target advertisement and one hundred forty seven participants met this criterion. We called these modified attitudes and recall as "attitudes" and "recall" to distinguish them from the original attitudes and recall with all participants. The results of a 2 (certainty) \times 2 (valence) ANOVA on recall' showed a significant main effect of certainty ($M_{\text{certain}} = 3.97$, SD = 1.09 vs. $M_{\text{uncertain}} = 4.55$, SD = 1.09; $F(1, 143) = 10.30$, $p < .001$), see Table 3. Valence did not have any significant effect ($F_s < 1$). Interestingly, a 2 (certainty) \times 2 (valence) MANOVA on attitudes' and recall' confirmed that participants in the uncertainty

〈Table 2〉 The effect of certainty and valence on recall

Independent Variables	F	p-value
Certainty	.57	.45
Valence	3.00	.09
Certainty \times Valence	2.23	.14

condition expressed more favorable attitudes' than those who were in the certainty condition, and reported higher recall' as well ($M_{\text{certain}} = 1.15$, $SD = .64$ vs. $M_{\text{uncertain}} = 1.37$, $SD = .59$; $F(1, 143) = 3.95$, $p < .05$). These results show that the uncertainty condition encourages more elaboration efforts than the certainty condition, see Figure 2 and 3.

3.2.4 Mediating Analysis

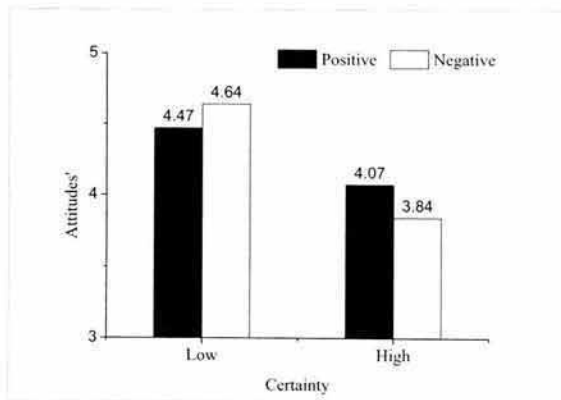
The depth of information processing (Anderson and Reder 1979) influences the processing fluency (Winkielman et al. 2003) which facilitates pleasantness experiences (Winkielman and

Cacioppo 2001) leading to more favorable attitudes. Hence, we predicted that if elaboration led to more favorable attitudes in our experiment, recall' would mediate the effect of certainty on attitudes'. As evidence for this prediction, we conducted mediating analysis with participants who responded at least partial recall for the target advertisement. We used a bootstrapping test proposed by Preacher and Hayes (2008). A bootstrapping analysis with 10,000 resample revealed that the indirect effect of certainty on attitudes' via recall' was .0380 with 95% bias corrected confidence interval (CI) ranging from .0027 to .1089. Since zero is outside of CI range, the mediation effect

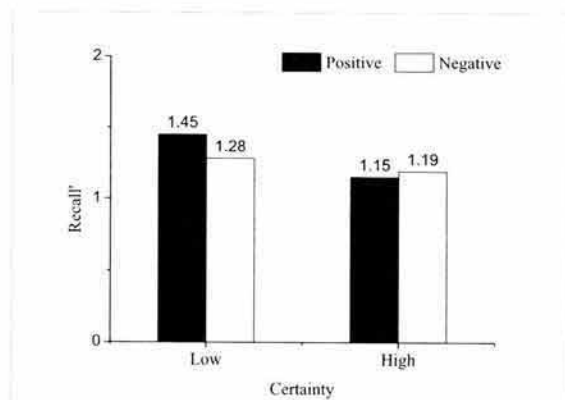
〈Table 3〉 The effect of certainty and valence on recall'

Independent Variables	F	p-value
Certainty	3.95	.05
Valence	0.25	.62
Certainty × Valence	1.20	.28

〈Figure 2〉 The effect of certainty and valence on attitudes'



〈Figure 3〉 The effect of certainty and valence on recall'



〈Table 4〉 Results of bootstrapping test

	Coefficient	SE	t	p-value
Certainty → Recall'	.11	.05	2.08	.04
Recall' → Attitudes'	.35	.14	2.44	.02
Certainty → Attitudes'	.29	.09	3.13	.00*
Certainty → (Recall') → Attitudes'	.33	.09	3.55	.00**

* The p-value was .0021.

** The p-value was .0005.

of recall on attitudes is confirmed (for the detailed results, see Table 4).

IV General Discussion

4.1 Theoretical Contributions and Implications

The results of this research show that certainty plays an influential role on information processing. Specifically, a 2 (certainty) × 2 (valence) ANOVA indicates that feeling uncertain initiates more use of cognitive resources than feeling certain encouraging people with low certainty to process information more systematically than those who with high certainty. It also indicates that attitudes are formed as a consequence of thoughtful processing, not by the influence of valence. One unexpected finding was that certainty has no significant effect on recall. We suspected the difficulty of recall measure as a possible cause and conducted another analysis with participants who showed at

least partial recall and called these modified attitudes and recall as attitudes' and recall'. The results confirmed that participants in the uncertainty condition (vs. certainty condition) express more favorable attitudes' and better recall', as predicted. In addition, mediating analysis using a bootstrapping test revealed the mediating effect of recall' on attitudes'.

The present study has two significances in the academic perspective. Our study extends the certainty literature by examining attitudes showing that certainty is the factor that influences attitudes. Previous literature showed the effect of certainty on impression formation such as stereotyping (Tiedens and Linton 2001), ideation (Baas, De Dreu, and Nijstad 2012), and information search (Grand and Tybout 2008), but there is no empirical investigation of the effects of certainty on attitudes. This research examines the effect of certainty in a marketing domain by showing that uncertainty fosters elaboration, which in turn leads to more favorable attitudes. Second, an important contribution of this research is the identification of the dynamics linking certainty, recall', and at-

titudes'. By mediating analysis proposed by Preacher and Hayes (2008), we show the indirect effect of certainty on attitudes' via recall'. Attitudes are the evaluative outcome of cognitions and affects, therefore the strength of the evaluations can vary, which in turn suggests that there could be varying degree of attitude resistance, persistence, and attitude-behavior consistency (Crano and Prislin 2006). According to dual-processing models that are quite influential attitudes and persuasion paradigms, attitudes can be built via both effortful and less effortful processing but attitudes formed via less effortful processing are susceptible to interferences and less likely to affect behavior (e.g., Holland, Verplanken, and Knippenberg 2002). In this research, we demonstrate that uncertainty fosters elaboration, which in turn affects attitudes accompanied with better recall.

This research also provides managerial implications. The results indicate that perceived uncertainty (vs. certainty) encourages more effortful processing and has influences on both attitudes' and recall'. To this end, the persuasive power of advertising messages should be carefully reviewed from a certainty continuum. For example, when placing a print advertisement in a magazine, the best location may not be the first page or the last page of the magazine but right after contents inducing or related to a "happy or disgust" emotion. In addition, for advertising messages to be more persuasive, it may be a good idea to start with a head copy leading

uncertainty followed by attribute details. A good example of inducing uncertainty can be found from a TV commercial of iPad2 from Apple. The commercial in short description says, "We will never stop doing the things we love, but with the iPad we'll do them in amazing new ways." And the commercial ends by saying "how we do all this will never be the same." This narration makes audiences start thinking "how" and stimulate them to search for more information. There are ample examples such as "Don't leave home without it (American Express)," "Reach out and touch someone (AT&T)," "Have it your way (Burger King)," and "It's everywhere you want to be (VISA)." All these examples do not explicitly state what their advertisements are about but attempt to make audiences to engage in information search to alleviate their uncertain feeling of "how" and "what is it about?."

4.2 Limitations and Future Research Directions

Along with the academic and managerial implications, the present study has the following limitations. Firstly, although analysis from recall' demonstrated the predicted effects of certainty, recall failed to reveal the expected relationship with attitudes. We used unaided recall which is a quite difficult memory task and suspected that a possible cause of this discrepancy lies on the sensitivity of the measurement

method. To examine this possibility, we conducted recall analysis with the participants shown at least partial recall. The analysis results demonstrated predicted effects of certainty on attitudes and recall that are consistent with the findings of previous literature. Therefore, if we measured the recall with different level of difficulties such as unaided recall, aided recall, and recognition, we could have identified the working mechanism of certainty on attitudes more clearly. Furthermore, we could have obtained consistent results with previous findings (Aaker and Lee 2001). Hence, for the future research, recall should be measured by different level of difficulties.

Secondly, from recall analysis participants in a positive emotional valence condition showed better recall than those in a negative emotional valence condition that contradicts with previous findings. This inconsistency can be investigated from the level of the interpretation point of view. According to Mick (1992), as the level of subjective interpretation gets higher, persuasion occurs but recall performance is decreased. This suggests that attitudes and recall may not always show consistency, and that if the subjective interpretation of the given message reaches higher than a certain limit, the message loses its original context and translates into personalized meaning depending on the individuals' schema showing no recall but still expressing favorable attitudes. We selected running shoes as an advertised product.

By taking Mick (1992)'s findings into account, depending on individuals' interpretation level, the attributes of running shoes might be translated into personalized words such as exercise, health, beauty, better body shape, less weight, and so on. In fact, the recall responses of some respondents showed this tendency. For example, for the product attributes 'ultra-light,' some participants responded like 'comfortable' or 'fit better.' Since this research did not include the level of interpretation as a variable, we were not able to analyze the effect of the different level of interpretation. But investigating the effects of the level of interpretation on attitudes and recall may be able to provide very interesting insights to understand the underlying mechanism of attitudes from a different aspect.

Finally, this research only shows the relative effects of certainty on the certain-uncertain continuum and did not show the absolute effect of certainty on attitudes. Thus, in future research, implementing a control group into the research would be valuable to further enhance the understanding of the effect of certainty on attitudes and recall.

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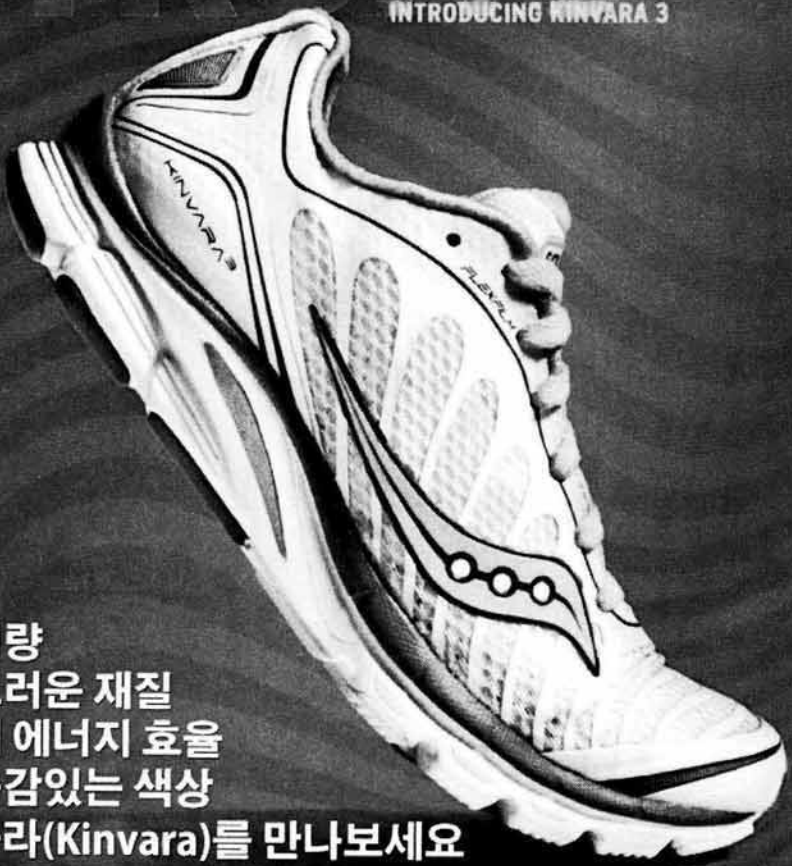
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〈Appendix〉

Target Advertisement, KINVARA

FIND YOUR
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킨바라™
KINVARA
INTRODUCING KINVARA 3



초경량
부드러운 재질
최대 에너지 효율
생동감있는 색상
킨바라(Kinvara)를 만나보세요