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HOW THE PERCEPTUAL FLUENCY OF PRICE DISCOUNTS AND PROMOTIONAL CUES AFFECT CONSUMER RESPONSES

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We investigated the combined effect on consumers of the perceptual fluency of price discounts and the two promotional cues of discount duration and frequency. We proposed that consumers' initial responses to price discounts would be maintained or modified depending on the processing fluency of discount information. Results from 2 experiments showed that when a promotional cue implied a short discount duration or low discount frequency and the discount information was difficult to process, participants perceived the duration as longer or the frequency as higher, and they evaluated the product less favorably if the discount information was difficult to process compared to if it was easy to process. On the contrary, when a cue implied a long discount duration or a high discount frequency, participants perceived the duration as shorter or the frequency as lower and evaluated the product more favorably if the discount information was difficult to process compared to if it was easy to process. We show conditions in which processing disfluency can be beneficial.

Keywords: processing fluency, price discount, promotion duration, promotion frequency.

Imagine that you are visiting your favorite store to buy daily necessities. When passing by a display stand of body products, you find that body lotions are on

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sale. However, you have some difficulty processing the discount information because the regular and discount prices are not as clearly marked as usual. In this case, would your response to the price discount differ from a case when the discount was clearly marked?

Research has revealed that it is not only the content of information but also the degree of difficulty individuals experience when processing the information that affects their response to the information (Motyka, Suri, Grewal, & Kohli, 2015; Reber, Schwarz, & Winkielman, 2004; Tsai & Thomas, 2011). With this key finding revealed, researchers began to apply it to the understanding of consumer responses to price discounts. For example, it was found that when the regular price was presented in a larger font than the discount price (Coulter & Coulter, 2005), or when the regular price was printed on the left of the display and the discount price was printed on the right (Biswas, Bhowmick, Guha, & Grewal, 2013), consumers perceived the discount magnitude as larger and evaluated the discounted target more favorably because they were able to process the discount information more easily than either when the regular price was presented in a smaller font than the discount price or when the regular price was printed to the right and the discounted price to the left. In addition, the more easily consumers could calculate a discount price and the amount saved (Coulter & Roggeveen, 2014; Thomas & Morwitz, 2009), the more positive was their response. However, whereas the majority of researchers have suggested the advantages of fluency of discount information processing, Motyka et al. (2015) reported an opposite finding. They asserted that presenting discount price information in a *unique* font, that is, one that was unfamiliar or not commonly used, made it difficult for people to perceive and this could actually increase preference for discount products because consumers were then likely to go through a deeper and more systematic processing of the discount information.

These researchers have focused on discount information related to actual price, such as regular price, discount price, and the amount saved. However, for many discount promotions, a variety of additional information is presented or inferred, including the duration and frequency of the discount and the reason for the discount. Such additional information has been known to affect consumer responses to price discounts (Lichtenstein & Bearden, 1989; Zielke, 2014). For instance, in previous research it was demonstrated that when discounts were frequent, consumers' trust decreased and their internal reference price dropped, leading to a decline in the effectiveness of the discounts (Lichtenstein & Bearden, 1989). These findings prompted our interest in investigating the combined effect of processing fluency and the additional information about discounts. Consumers are exposed to promotional cues that enable them to infer the duration and frequency of discounts, and the influence of these promotional cues will differ depending on how easy it is for the consumer to process the information.

Specifically, we examined whether or not presenting promotional information in a disfluent format can, in fact, elicit positive consumer responses, especially when consumers infer that the duration of the discount is long or the frequency of the discount is high.

Theoretical Background

The Effects of Processing Fluency

Processing fluency refers to the subjective difficulty experienced when processing information, and has three distinctive effects. First, processing fluency elicits a positive emotion, which develops into preference for the target. If information processing is easy, the individual experiences a hedonic feeling because he/she feels that he or she has understood the information well. This positive feeling is transferred to the processing target, leading to preference for the target (Reber et al., 2004). For example, Reber et al. found that when the subject of a painting was more easily processed, people rated the painting as having a higher aesthetic value than a painting that was not easily processed. In addition, Greifeneder and Keller (2012) reported that when arguments supporting an issue were more easily retrieved from memory, people held a positive attitude toward that issue. Similarly, when the attributes or features of particular products were easier to process, the products were more positively evaluated (Tsai & Thomas, 2011).

Second, when individuals are making a judgment about a specific target, processing fluency activates in them beliefs about the world and how things work that are commonly held by the layperson (naïve theory) and these affect their judgment (Schwarz, 2004). For example, people generally have the naïve belief that information that is either familiar or truthful is easy to process. As they also believe the reverse of this, that information that is either unfamiliar or untruthful is hard to process, they judge easily processed information as familiar or truthful (Shah & Oppenheimer, 2007). Pocheptsova, Labroo, and Dhar (2010) found that when a product description was easily processed, the product was perceived as familiar and preferred, especially when the products were everyday necessities. Similarly, customer reviews of a product that were easy to understand were weighted more heavily than those that were hard to understand, and those that were easy to understand were also more likely to be believed (Shah & Oppenheimer, 2007). Pocheptsova et al. (2010) also demonstrated that when a product description was difficult to process, the product was rated as unique. Similar results were found by Song and Schwarz (2009). In relation to amusement park rides and food additives, they showed that when the name of a product was difficult to pronounce people perceived it as adventurous or new.

Third, processing fluency influences the individual's style of information processing. It has been shown that when difficulty is experienced in information processing, this reduces confirmation bias by promoting more effortful processing (Hernandez & Preston, 2013). When information is presented in a disfluent format, people tend to modify, and rely less on, their existing beliefs. In their study, Hernandez and Preston (2013) found that when an individual with a conservative political attitude read an article written in a familiar font (fluency) in which the author expressed support for the death penalty, the reader tended to support that idea; however, when the same article was written in a light gray bold and novel font (disfluency), the reader's tendency to support the idea became weaker. Similarly, Alter, Oppenheimer, Epley, and Eyre (2007) found that ease of information processing promotes heuristic processing, whereas difficulty of information processing enhances careful and systematic processing. When the masthead of a magazine was presented in a difficult-to-read-combination of letter-resembling symbols, as against a normal font, readers expended greater cognitive effort to understand the remaining contents of a review of MP3 players and were more likely to be affected by central, rather than peripheral, information, such as the benefits or features of the product (Alter et al., 2007).

Price Discounts and Processing Fluency

Previous researchers on processing fluency in the context of price discount have documented the positive influence of fluency on value perception and attitude. Several have investigated how presentation of price information affects processing fluency, thereby inducing positive consumer response. For instance, Coulter and Coulter (2005) demonstrated that when physical font size matches numerical price magnitude (i.e., bigger number–bigger font; smaller number–smaller font), people experienced increased fluency in information processing, resulting in more favorable price judgments. In addition, Biswas et al. (2013) showed that the display location of a discount price relative to the regular price affected consumer evaluation. They argued that, compared to presenting the sale price to the left of the original price, presenting the sale price to the right of the original price makes it easier for consumers to calculate discount magnitude.

Also, researchers have shown that the level of fluency experienced in the process of comparing regular and discount prices, and of calculating amounts saved, affects consumer response. For example, Thomas and Morwitz (2009) found that when it was easier for consumers to calculate the difference between a regular price and a discount price, consumers perceived the discount magnitude to be larger. Coulter and Roggeveen (2014) reported that when the regular price, the discount price, and the amount saved were composed of base-10 approximation sequences or multiples of one another, so were easier to calculate, the deal viewing time was shorter and the purchase intention was higher.

Although the majority of researchers dealing with price discounts and fluency have reported the superior effect of fluency in eliciting a favorable consumer response, in a recent study Motyka et al. (2015) demonstrated that presenting discount offers in disfluent formats can be more effective in eliciting a positive response from consumers than is presenting the same offers in fluent formats. For example, Motyka et al. demonstrated that using an unfamiliar font or a color that is not as easy to see, can be more effective in enhancing purchase intention than is presenting the same offers in a familiar font or using a color that is easy to see. People would then find information processing more difficult and would, therefore, utilize a deeper and more systematic processing method.

Hypotheses Development

The Fluency of Price Discounts and Promotional Cues

In the current research, we proposed that, as additional cues regarding price discounts, discount duration and frequency would play moderating roles in determining the effects of the processing fluency of discount information on consumer responses. Although discount duration is an essential condition of discount promotions, we believe that it has not received enough attention in the literature. Findings in research on time-limited promotions may shed some light on this aspect of the effect of processing fluency. Specifically, for time-limited offers, it has been found that consumers tend to consider the discount more valuable and they have a stronger purchase intention compared to when offers are time-independent (Aggarwal & Vaidyanathan, 2003; Eisenbeiss, Wilken, Skiera, & Cornelissen, 2015). Because of the unavailability heuristic whereby individuals perceive something that is difficult to acquire as more valuable and more desirable than something that is easy to acquire (Mukherjee & Lee, 2016), in the condition of a time-limited offer consumers feel a "gain it or lose it" threat, that is to say, if one does not take advantage of the discount offer one will lose out (Aggarwal & Vaidyanathan, 2003). Although the researchers cited here have focused solely on the presence or absence of a time limit, we expected that a similar result would occur even when the discount duration was manipulated. In other words, if the discount duration was short, the probability of acquiring the discount opportunity would be low. People would perceive the value of the discount as large and the expected regret for losing the chance for a discount would increase. Thus, people would perceive the discount as more valuable when the offer was of short duration than when it was long.

We then considered the issue of how consumers would respond when price discount information was not easy to process. As already discussed, if people perceive that information is difficult to process, they tend to reconsider and modify their first or automatic response, which was based on their previous

beliefs or knowledge. Instead they rely more on a thorough and systematic processing of the information (Alter et al., 2007; Hernandez & Preston, 2013). In particular, people may suspect that their previous judgment is biased and may modify it toward the opposite direction, in order to remove the suspected bias (Wegener & Petty, 1995). Thus, when discount information is disfluent, it is likely that consumers will go through a two-stage process. That is, the basis for the formation of their first judgment or inference regarding discount promotions would be the given information and, when the information is disfluent, this initial response would then be modified. Specifically, if processing of discount information is somewhat difficult and there is a cue representing a short discount duration, the initial favorable response caused by the short discount duration would be modified to a less positive response. Conversely, in the condition of a long discount duration, the initial unfavorable response caused by the long discount duration would be modified to a less negative response. Therefore, we proposed the following hypothesis:

Hypothesis 1: When there is a cue indicating short discount duration, consumers will evaluate the discount offer less favorably if the price discount is disfluent, compared to when it is fluent. On the contrary, when there is a cue indicating long discount duration, individuals will evaluate the discount offer more favorably if the price discount is disfluent, compared to when it is fluent.

Besides discount duration, another important cue that affects consumer response to discount promotions is discount frequency. According to findings reported in previous research, individuals are more likely to trust distinctive and exceptional discounts with lower discount frequency and are more likely to form a stronger purchase intention for these particular discounts (Lichtenstein & Bearden, 1989). This finding stems from people's tendency to focus more on information they perceive as making the offer unique because it occurs infrequently or is exceptional, and thus, they process the information more systematically (Jones & McGillis, 1976). In contrast, in the case of frequent discounts, people are likely to become less interested in the discount product. When the products is discounted frequently consumers also begin to perceive that the product is more often sold at the discount price than at the regular price and, thus, they form their internal reference price based on the discount price. If the internal reference price becomes lower, the consumer will perceive a low magnitude for the discounted price. The regular price will also be ignored, and the discount promotions will not be trusted. That is, less frequent discounts induce a more favorable response than more frequent discounts do from consumers. Furthermore, we expected that this effect would be maintained when the information about the discount promotion was easy to process. However, in the condition of discount duration, if a disfluent price offer is presented, the opposite effect will occur. When a cue indicates low discount frequency, the initial positive consumer response will be modified into

a less positive one. When a cue indicates high discount frequency, the initial negative response will become a less negative one. Therefore, we proposed the following:

Hypothesis 2: When there is a cue indicating low discount frequency, consumers will evaluate the discount offer less favorably if the price discount is disfluent, compared to when it is fluent. On the contrary, when there is a cue indicating high discount frequency, consumers will evaluate the discount offer more favorably if the price discount is disfluent, compared to when it is fluent.

Experiment 1

We conducted Experiment 1 to test for the effects of perceptual fluency and discount duration (Hypothesis 1).

Method

Design and participants. In the experiment we used a 2 (perceptual fluency: fluency vs. disfluency) × 2 (discount duration: discount that lasts a week [short duration] vs. discount that last a month [long duration]) between-subjects design. Participants were 87 undergraduate students from a marketing department subject pool at a university in South Korea, who took part in the experiment for extra course credits (M_{age} = 22.4, SD = 3.50, women = 50.6%) and were randomly assigned to one of four experimental conditions.

Stimuli and procedure. After providing informed consent, all participants were asked to imagine themselves in a scenario where they were browsing online shopping malls to buy a body lotion and came across a brand that was quite attractive and on sale.

Participants were each seated in front of a computer screen where they viewed an advertisement. The product advertisement consisted of an image of the body lotion container with text on key product features on the label and price information accompanying the image. The image of the container was of an actual body lotion, but it was one that is not sold in Korea and the brand name was withheld. The regular price and sale price were presented, and the discount rate was set at 33%, which we judged to be large enough to attract consumers to want to purchase the product.

Similar to in a previous study (Tsai & Thomas, 2011), the fluency of the discount offer was manipulated by the brightness of the text. For the fluency condition, the font was clear and black whereas, for the condition of disfluency, the font was a little blurry and grey. For discount duration, a short versus long duration was manipulated by setting the term for discount as one week for the short duration versus a month for the long. After viewing the promotional advertisement for as long as they wished, participants were asked to answer

a series of statements. Upon completing the measures, the participants were debriefed, thanked, and each received a small gift valued at about US$1.

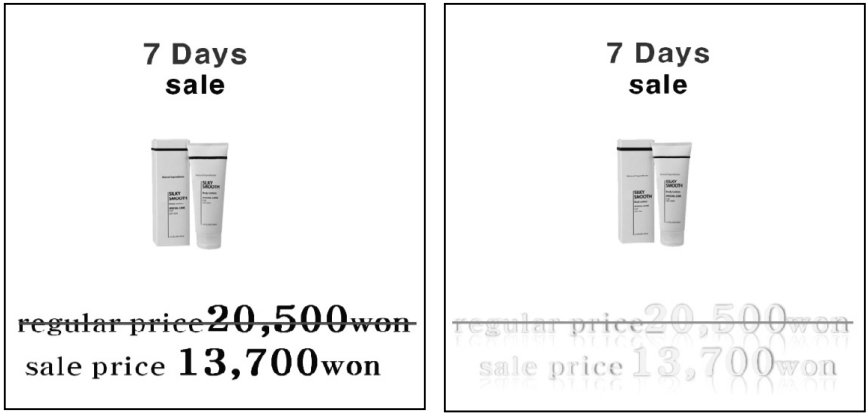

Figure 1. *Stimulus advertisement for the short duration condition in Experiment 1.*
Note. 20,500 won = $US17.50, 13,700 won = $US11.70

Measures. First, in order to measure product evaluation, participants evaluated the product (two items) on 7-point semantic differential scales (1 = *Unfavorable* to 7 = *Favorable*; 1 = *Negative*, to 7 = *Positive*; Cronbach's α = .87). We used a version of these items developed by Aggarwal and Vaidyanathan (2003) that had been translated into Korean by Huh and Ju (2005). Second, participants' perception of discount duration was measured, using two-item 7-point semantic differential scales modified from Eisenbeiss et al. (2015), which were rated from 1 = *The discount duration is short* to 7 = *The discount duration is long*; and 1 = *The promotion lasts a short time* to 7 = *The promotion lasts a long time* (Cronbach's α = .98). Finally, for manipulation check of perceptual fluency, two-item 7-point semantic differential scales modified from Tsai and Thomas (2011) were presented: 1 = *It was easy to process the discount information*, to 7 = *It was difficult to process the discount information*; and 1 = *It was simple to process the discount information* to 7 = *It was complicated to process the discount information* (Cronbach's α = .98).

Results

Manipulation checks. First, the results showed that participants perceived price discount information more easily in the fluent condition compared to the disfluent condition, and thus the manipulation of perceived fluency was successful, $M_{\text{fluency}} = 2.28$, $SD = 1.10$ vs. $M_{\text{disfluency}} = 3.48$, $SD = 1.51$; $t(85) = -4.22$, $p < .001$. In addition, in order to check the manipulation of discount duration,

participants' perceptions of discount duration were compared within the fluency condition, which is considered to be a normal condition. The result shows that the participants perceived the discount duration to be longer in the long-duration condition compared to the short-duration condition, $M_{\text{short duration}} = 4.43$, $SD = 2.11$ vs. $M_{\text{long duration}} = 5.67$, $SD = .89$; $t(41) = 2.59$, $p < .05$.

Product evaluation. In order to test our hypothesis, we performed an analysis of variance (ANOVA) with perceptual fluency and discount duration as the independent variables and participants' evaluation of the discount product as the dependent variable. The ANOVA revealed that neither of the main effects were significant (both $F < 1$), but that the interaction between the two variables was significant, $F(1, 83) = 6.28$, $p < .05$, $\eta^2 = .07$. That is, when the discount duration was long, participants rated the discount product more favorably for the disfluent-price-information condition than they did for the fluent condition, $M_{\text{fluency}} = 3.67$, $SD = 1.37$ vs. $M_{\text{disfluency}} = 4.42$, $SD = 1.07$; $F(1, 83) = 4.50$, $p < .05$. However, when the discount duration was short, the difference in participants' evaluation between the fluent and disfluent conditions was not significant, $M_{\text{fluency}} = 4.35$, $SD = 1.27$ vs. $M_{\text{disfluency}} = 3.80$, $SD = 1.06$; $F(1, 83) = 2.10$, $p = .15$.

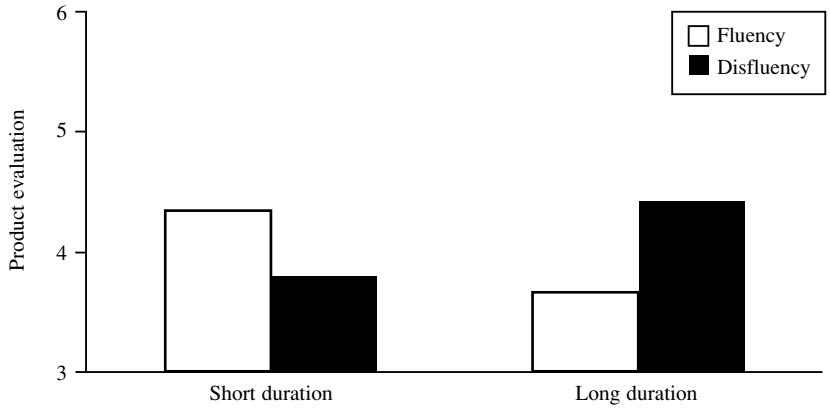

Figure 2-1. *The effect of processing fluency and discount duration on product evaluation (Experiment 1).*

Perceived duration. We had hypothesized that the perception of discount duration would change depending on processing fluency of price offers. In order to test this, we performed an ANOVA using processing fluency and discount duration as the independent variables and participants' perception of discount duration as the dependent variable. Results show that neither of the main effects was significant. For processing fluency the results were as follows: $F < 1$; discount duration, $F(1, 83) = 2.86$, $p = .095$, $\eta^2 = .03$, but the interaction between processing fluency and discount duration was significant, $F(1, 83) = 4.50$, $p < .05$,

$\eta^2 = .05$. When the discount duration was long, there was a difference of marginal significance between the disfluent- and fluent-price-information conditions, in that participants perceived the discount duration to be shorter in the disfluent-price-information condition than they did in the fluent-price-information condition, $M_{\text{fluency}} = 5.67$, $SD = .89$ vs. $M_{\text{disfluency}} = 4.83$, $SD = 1.58$; $F(1, 83) = 3.58$, $p = .06$. When the discount duration was short, the difference in participants' perception of the discount duration in the fluent and disfluent conditions was nonsignificant, $M_{\text{fluency}} = 4.43$, $SD = 2.11$ vs. $M_{\text{disfluency}} = 4.98$, $SD = 1.32$; $F(1, 83) = 1.30$, $p = .26$. That is, when disfluent price discount information was presented, consumers were likely to modify their initial judgment on discount duration in the opposite direction, most notably when the duration was long.

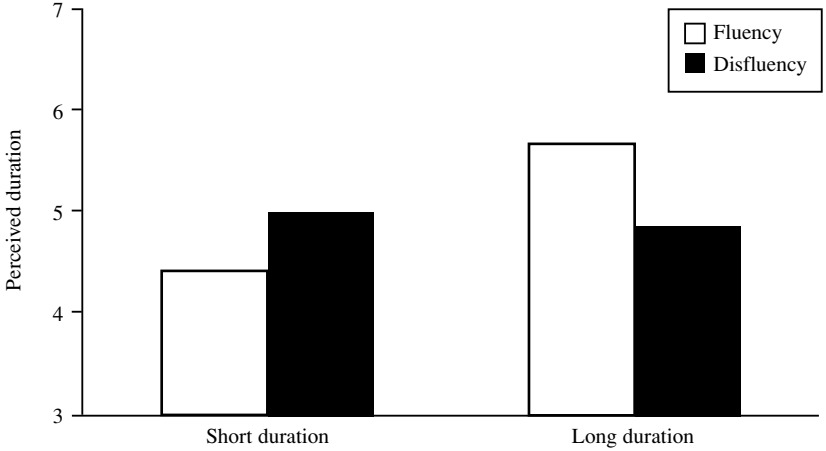

Figure 2-2. *The effect of processing fluency and discount duration on perceived duration (Experiment 1).*

Experiment 2

We designed Experiment 2 to test for the effects of perceptual fluency of price offers and discount frequency (Hypothesis 2).

Method

Design and participants. In the experiment we used a 2 (perceptual fluency: fluency vs. disfluency) × 2 (discount frequency: limited-time discount for January only [low frequency] vs. monthly discount for January [high frequency]) between-subjects design. Participants were 88 undergraduate students recruited and assigned in the same way as in Experiment 1 ($M_{\text{age}} = 22.5$, $SD = 2.05$, women = 43.2%).

Stimuli and procedure. Except for the manipulation of discount frequency cue, the method, procedure, and stimuli used in Experiment 2 were identical to those of Experiment 1. For the manipulation of discount frequency, in the low-frequency condition, by using the phrase "limited-time discount for January only", the discount frequency cue induced participants to infer that it was likely to be a one-time offer. In the high-frequency condition, by presenting them with the phrase "monthly discount for January," the discount frequency led participants to make the inference that similar price discounts were likely to be offered again or would be made on a regular basis. After providing informed consent, participants viewed the promotional advertisement for as long as they wished.

Measures. Participants' evaluation of the discounted product (Cronbach's α = .87) and perceptual fluency (Cronbach's α = .97) were measured using the same scales as in Experiment 1. In addition, participants' perception of discount frequency was measured, using two-item 7-point semantic differential scales that were modified from Blair and Burton (1987): 1 = *There have rarely been similar discount offers*, 7 = *There have often been similar discount offers*; and 1 = *The product has seldom been offered at a discount*, 7 = *The product has frequently been offered at a discount* (Cronbach's α = .96).

Results

Manipulation checks. The results showed that participants perceived price discount information more easily in the fluent-information-processing condition than they did in the disfluent condition, and thus the manipulation was successful, $M_{\text{fluency}} = 2.60$, $SD = 1.19$ vs. $M_{\text{disfluency}} = 3.62$, $SD = 1.55$; $t(86) = -3.45$, $p < .001$. In addition, participants' perception of discount frequency was compared within the fluent-discount-offer condition in order to check the manipulation of discount frequency. Results show that participants perceived discount frequency to be higher in the condition with a high frequency cue than in the condition with a low frequency cue, $M_{\text{low frequency}} = 5.26$, $SD = .87$ vs. $M_{\text{high frequency}} = 6.00$, $SD = .77$; $t(40) = 2.91$, $p < .01$.

Product evaluation. In order to test our hypothesis, we performed an ANOVA with perceptual fluency and discount frequency as the independent variables and participants' evaluation of the discounted product as the dependent variable. Neither of the main effects was significant: perceptual fluency, $F(1, 84) = 1.53$, $p = .22$, $\eta^2 = .02$; discount frequency, $F < 1$, but the interaction between the two variables was significant, $F(1, 84) = 4.05$, $p < .05$, $\eta^2 = .05$. When discount frequency was high, participants evaluated the discount product more favorably in the disfluent condition than they did in the fluent condition, $M_{\text{fluency}} = 3.39$, $SD = 1.19$ vs. $M_{\text{disfluency}} = 4.22$, $SD = 1.16$; $F(1, 84) = 5.80$, $p < .05$. In contrast, when discount frequency was low, there was a marginally significant difference in participants' evaluation in the fluent and disfluent conditions, $M_{\text{fluency}} = 4.08$, $SD = 1.13$ vs. $M_{\text{disfluency}} = 3.88$, $SD = 1.27$; $F(1, 84) = .28$, $p = .60$.

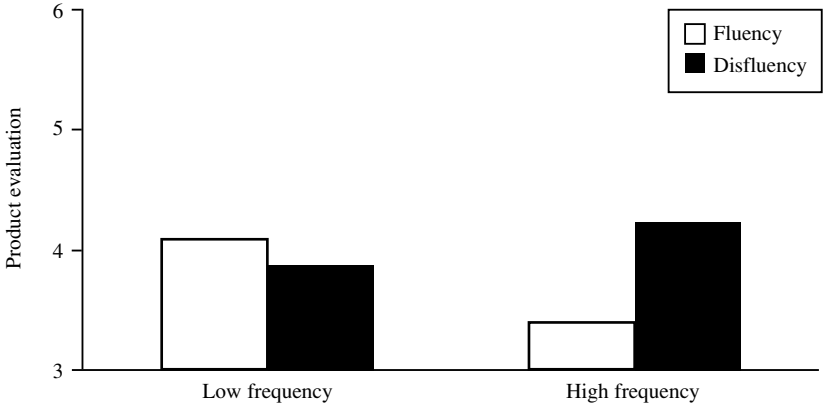

Figure 3-1. *The effect of processing fluency and discount frequency on product evaluation (Experiment 2).*

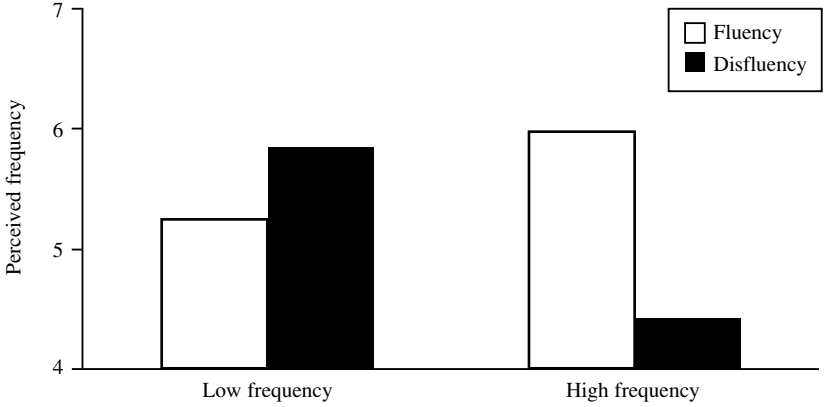

Figure 3-2. *The effect of processing fluency and discount frequency on perceived frequency (Experiment 2).*

Perceived frequency. We hypothesized that people's perception of discount frequency would change depending on the perceptual fluency of discount offers. In order to test this, we performed an ANOVA with perceptual fluency and discount frequency as the independent variables and participants' perception of discount frequency as the dependent variable. The main effect of perceptual fluency was significant, $F(1, 84) = 3.85$, $p = .05$; participants perceived discount frequency to be higher in the fluent-discount-offer condition than they did in the disfluent condition, $M_{\text{fluency}} = 5.67$, $SD = .89$ vs. $M_{\text{disfluency}} = 5.09$, $SD = 1.54$, $\eta^2 = .04$. The main effect of discount frequency was not significant,

$F(1, 84) = 1.91$, $p = .17$, $\eta^2 = .02$, but the interaction between the two variables was significant, $F(1, 84) = 19.13$, $p < .001$, $\eta^2 = .19$. Specifically, when discount frequency was high, participants perceived it as lower in the disfluent condition than they did in the fluent condition, $M_{\text{fluency}} = 6.00$, $SD = .77$ vs. $M_{\text{disfluency}} = 4.44$, $SD = 1.73$; $F(1, 83) = 22.08$, $p < .001$. On the contrary, when discount frequency was low, the difference in participants' perception of frequency between the fluent and disfluent condition was nonsignificant, $M_{\text{fluency}} = 5.26$, $SD = .87$ vs. $M_{\text{disfluency}} = 5.86$, $SD = .79$; $F(1, 84) = 2.67$, $p = .11$. The results suggest that when presented with price discount information that is difficult to process, consumers tend to modify their initial judgment on discount frequency in the opposite direction, most notably when the frequency is high.

Discussion

We investigated the combined effect of processing fluency of price discount offers and the two promotional cues of discount duration and frequency. We predicted that when exposed to discount promotions, people form their initial response to discounts based on available information of promotional cues and discount size and then keep or modify this response depending on the processing fluency of the discount information. In particular, we predicted that when a disfluent price offer is presented, consumer response would change in the opposite direction from the initial response. The effects of a discount duration cue and a discount frequency cue were examined in Experiments 1 and 2, respectively. Results show that both of these variables interacted with perceptual fluency and, furthermore, that the interaction between promotional cues and perceptual fluency was driven by the effect of fluency on a long duration and a high frequency rather than the effect of fluency on a short duration and a low frequency. When there was a long discount duration or a high discount frequency cue, participants in the disfluency condition inferred a shorter discount duration or a lower discount frequency and evaluated the discount product more favorably than did those in the fluency condition. However, the difference between the fluent and disfluent conditions was not significant when the duration was short or the frequency was low. We expected that there would be a modifying effect of fluency in both the long and the short duration conditions and in both the high and the low frequency conditions. However, the results suggest that people are more likely to change their initial response toward disfluent discount information when the information is less favorable. We speculated that participants' initial responses toward price discounts were stronger when discount duration was short or when discount frequency was low, thereby leaving them less room for change.

The results of the two experiments suggest that the processing fluency of price information influenced participants' responses toward the price discount by

changing their information processing style. If fluency induces a positive feeling, there should be a significant main effect of fluency, leading to more favorable responses in the fluent condition compared to the disfluent condition. Or if naïve theory is in operation, consumer responses should be less positive in the fluent condition than in the disfluent condition. Specifically, people have the naïve belief that some information (e.g., price discount) is easily processed, probably because it is familiar to them, and this belief will result in a less favorable response in the context of a price discount.

Our findings provide the following theoretical and managerial implications. First, in all of the existing studies on processing fluency in the context of pricing the focus has been on price information itself (Biswas et al., 2013; Coulter & Roggeveen, 2014; Thomas & Morwitz, 2009). However, in more realistic settings, additional information such as discount duration or frequency is present and is likely to affect consumer responses. In this study we have extended the understanding of price discounts and processing fluency by identifying discount duration and frequency as additional conditions in which processing disfluency can be beneficial in the context of a price discount. We have, therefore, enhanced understanding by exploring the combined effects of processing fluency of discount information and promotional cues. In addition, our findings show that a disfluent presentation of price offers could enhance consumer product evaluations, whereas, with the exception of Motyka et al. (2015), previous researchers have mainly suggested that fluent processing has a positive effect in the context of price information. We have expanded existing knowledge by documenting the beneficial effect of disfluency. Specifically, when a promotional cue indicated that the discount duration was long or the discount frequency was high, the participants in our study had more favorable responses in the disfluent condition than they did in the fluent condition.

Furthermore, we have contributed to understanding how different types of promotional cues affect consumer attitudes and decisions. Previous researchers have generally compared time-limited offers with time-independent offers, or past-referenced discounts with competitor-referenced discounts (Aggarwal & Vaidyanathan, 2003). However, comparisons of these types of discounts might lead to confounding effects. For instance, in addition to the frequency dimension, when a discount is offered the two prices may be a comparison of that company's regular price for the product with a reduced price or it may be a comparison of the company's price for a product with a competitor's price. We attempted to address this issue by manipulating discount duration and frequency in a unidimensional fashion.

From the practical perspective, marketers should be careful not only about the magnitude of a discount being offered but also about the way in which they present the information about the price discount. Researchers have generally

expressed the view that discount information should be communicated as fluently as possible to help consumers to process the information (e.g., Coulter & Roggeveen, 2014; Thomas & Morwitz, 2009). However, if the discount duration is long or the discount frequency is high, our results showed that it is actually advantageous to present discount information that consumers have some difficulty in perceiving. Of course, if promotional information is too difficult to understand, consumers may give up on information processing. An optimal level of disfluency needs to be calibrated according to the established marketing research methods that have been developed for this purpose.

Some limitations should be noted. First, we manipulated perceptual fluency by changing the color and clarity of the text in the discount offers. To enhance the generalizability of our findings, future researchers could explore various methods, such as changing figure–background contrast or text size/font type (e.g., Motyka et al., 2015). Also, although we examined the impact of price offers on participants' product evaluations, it was in a laboratory setting and future researchers need to explore the influence of price offers on the actual purchase behavior of real-world consumers via field experiments.

Second, our hypotheses were based on the premise that when they are exposed to disfluent information, individuals tend to reconsider and change their first or automatic response. If their cognitive resources are depleted, consumers are likely to maintain their initial response in the disfluent condition and will respond similarly to those in the fluent condition, and this serves as an additional variable for future consideration. Also, in our experiments, the participants were in the process of evaluating or selecting products. Thus, as the discount duration was short and discount frequency was low, consumers would put more trust in the discount, would perceive the promotional value as higher, and would evaluate the product more favorably. However, the opposite may occur. For example, if a consumer has previously evaluated a product, has already decided to purchase that particular product, and is about to buy it, he/she may not be affected by discount duration or may prefer a longer duration because this allows more time to make the actual purchase.

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