Loss and extremeness aversion: studying the influence of temporal distance

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ABSTRACT

Both Loss Aversion and Extremeness Aversion are already well-established theories in researches on consumer decision-making. However, it is a fact that the influence from consumer's temporal distance upon decisions of loss and extremeness aversion is always overlooked in previous studies. In an evaluation practice on a product for decision-making, consumers are usually influenced by both short and long temporal distances, and hence their purchase decisions. For this study two experiments were conducted to examine the influence of temporal distance on consumer's loss aversion and extremeness aversion decisions. Experiment 1 demonstrated that, with shorter temporal distance (when it takes shorter time to complete purchase), consumers would choose an alternative with relatively fewer losses; with longer temporal distance (more time-consuming to complete purchase), consumers would choose an alternative with relatively more gains. Experiment 2 demonstrated that in a buying context under short temporal distance, factor of extremeness aversion was more noticeable than in the context under long temporal distance, and consumers chose medium alternatives more often than extreme alternatives; in the context under long temporal distance, customers chose extreme alternatives more often than medium alternatives.

Keywords: Prospect Theory, Temporal Distance, Loss Aversion, Extremeness Aversion

INTRODUCTION

Imagine the different attitudes displayed by people in the following two situations. In the first, imagine that you are thinking of investing in a building. This building could theoretically enjoy an appreciation of 30% due to new parks, greenbelts, and major development in its surroundings, but it could also depreciate 20% due to economic depression. Would you be willing or unwilling to invest? In the second, imagine that investors are looking into the same building one year later. Again, it could possibly appreciate 30% thanks to new parks, greenbelts and major development, or suffer depreciation of 20% due to economic depression. Would you be willing or unwilling to invest? In the first situation, the short temporal distance (timing closer to purchase) compels people to focus on the potential depreciation of 20% rather than prioritizing potential gains. This is because when confronted with uncertain options, people become more loss-averse, and accordingly avoid options that are perceived to be risky. This is a kind of loss aversion behavior. In the second situation, thanks to the long temporal distance (timing farther from purchase), people interpret such matters with more abstract, higher-leveled constructs, and therefore attach greater importance to gains rather than to losses. With optimistic future expectations, they focus on the potential 30% appreciation, but downplay the possibility of 20% depreciation, choosing to invest more often than not.

Research on decision-making over the past twenty years has often emphasized loss aversion, because it expressly explains uncertain situations in which consumers make decisions when confronted with risks. Kahneman and Tversky (1979) advanced the Prospect Theory based on an economic model to explain people's irrational psychological activities. It is based on a viewpoint in traditional economics which theorizes that when confronted with decisions, people are influenced by bounded rationality, compelling them to go against the Expected Utility theory - namely, that because their perception towards gains and losses varies, people are more willing to select among alternatives involving risk at proper timing and further take action incompatible with rational decision making. In addition, Tversky and Kahneman (1991;1992) further stated that faced with uncertainty, people tend to avert losses as much as possible by avoiding possibilities that are perceived to be risky. This is the root of the loss aversion viewpoint.

Because consumers use referential information as purchase decision points, they perceive the possibility of loss. Such information is called referent. Differences among referents may result in loss aversion behavior. Therefore, according to the viewpoint of loss aversion as advanced by Kahneman and Tversky (1991), when a consumer has identified a certain alternative as a referent for behavioral decision making, losses caused by situations below this referent, if compared to gains, have a higher level of influence in utility function (Thaler, 1985). In other words, the differences between the two mean that painful feelings brought about by losses/disadvantages generally prevail over joyful feelings arising from gains/advantages. As such, consumers avoid risky alternatives, instead choosing those with no risk involved. In addition, Simonson and Tversky (1992) extended the viewpoint of loss aversion as advanced by Kaheman and Tversky (1991) by putting forward the theory of Extremeness Aversion, which theorizes that in addition to loss aversion, extremeness aversion can also happen when the consumer makes decisions in situations of uncertainty. That is, "for consumers, pain caused by loss prevails over pleasure resulting from gains" or "consumer's sense of disgust due to loss is stronger than positive effects arising from gains" as put forward by the loss aversion viewpoint. Therefore, when making decisions, ordinary consumers try to avoid extreme alternatives but tend to select medium ones in order to avert loss that may arise due to high price or poor quality.

Construal Level Theory (CLT), a recently established theory in the field of consumer

psychology, emphasizes the relation between various distance concepts and the extent of abstractness (or the construal level). According to CLT, the distance separating the present from an event in the future may systematically influence the way that consumers construct matters in their minds and, depending on distance, the value placed on future matters is variable, thus further affecting decision making at various timings. For matters in the distant future, people tend to interpret them simply and abstractly at a higher level, emphasizing potential value or major features. As for matters in the near future, they are understood to be imminent, leading people to describe them in complex fashion and concretely with details, focusing on the level of ease or difficulty in success, or minor features (Liberman & Trope, 1998; Trope and Liberman, 2000; 2003). Analysis regarding the influence of temporal distance on consumer's decision-making for future purchase is growing increasingly prevalent, yet this viewpoint has already been widely discussed in literature, in a variety of ways. Related discussion can be found in research on the influence of time pressure on judgment and decision-making (e.g., Ben Zur and Breznitz, 1981), management of decision-making in uncertain situations adopted for new products (e.g., Castano et al., 2008), negotiation and decision-making activities from various temporal viewpoints (e.g., Hendenson, Trope, and Carnervale, 2006), the role that temporal distance plays in object-oriented consumer's behavior (Mogilner, Aaker and Pennington, 2008), etc. To summarize, according to CLT viewpoints, it is clear that in the case of purchases at short temporal distance, consumers care significantly about whether the purchase object set in mind will be satisfied; at a long temporal distance, consumers tend to prioritize whether the purchase object will be accorded. The former is called Feasibility of Object; the latter, Desirability of Object (Liberman and Trope, 1998). It is implied therein that, in the case of decision making for purchases at short temporal distance, consumers consider losses more important than gains; for long temporal distance, consumers consider gains more than losses (Kim, Park and Wyer, 2008).

Whereas the influence of consumer's temporal distance on loss aversion and extremeness aversion decision-making has not yet been given significant consideration in previous research, practical decision-making product evaluation demonstrates that consumers are usually influenced by either short or long temporal distance, thus varying their decision. This study, by means of experiments conducted, discusses the influence of temporal distance on loss aversion, advancing the viewpoint that given different temporal distances, consumers may take loss aversion actions, and that temporal distance influences consumer's decision-making by means of different psychological mechanisms. In addition, it also intends to explore the influence of temporal distance on extremeness aversion, theorizing that given different temporal distances, consumers may take extremeness aversion action and thus select an alternative relatively safer option, i.e. a medium alternative.

Influence of Temporal Distance Viewpoints on Loss Aversion

In previous research relating to decision-making under uncertain risk, Kahneman and Taversky (1979) were the first to put forward loss aversion behavior in their prospective theory. It advocates making comparisons between the value function and subjective decision referent (reference point) to produce gain and loss outcomes that form an S-shaped curve. On the curve, gains appear on the concave portion, and losses on the convex. That is, the value function of losses is more abrupt than that of gains (losses loom larger than gains). This shows loss aversion behavior is common, and we believe it is because pain caused by losses is considered more important than pleasure from gains. Later research by psychology scholar Thaler (1980) also used the Positive Theory of consumer choice to represent the viewpoint that, if required to offer a price to sell one's current possessions, the subject is immediately confronted with a sense of loss, which in turn leads to the psychological effect of intangible

loss, compelling the subject to finally offer a high price. This mental effect is created by the possibility that people attach more importance to pain from losses than on pleasure from gains. Therefore, when facing potential loss, people hope to avert perception of loss - such phenomenon is a kind of loss aversion behavior (Kahneman and Tversky, 1991). In summary, to an individual confronting uncertain choices, the value function is S-shaped, where the slope of losses is much larger than that of gains. Therefore, excessive negative reaction to perception of losses is seen, compared to that of gains (Kahneman and Tversky, 1986), i.e. loss aversion. However, it is not possible to interpret such asymmetry between gains and losses with traditional Income Effect or progressive reduction of Risk Aversion (Kahneman and Tversky, 1992). Recently, the viewpoint of loss aversion has been widely adopted to explain diversified decision-making phenomena, including Status Quo Bias, Buying-selling Discrepancy, and Endowment Effect, among others.

It should be noted that temporal distance has been discussed in CLT (Liberman & Trope, 1998; Trope & Liberman, 2000). Researches in relation to temporal distance and construal level theory has demonstrated that people use relatively abstract constructs to represent matters relatively far in temporal distance and accordingly employ relatively concrete constructs to represent those that are near. According to viewpoints presented in CLT, in the case of purchases at short temporal distance, the consumer may care more about whether the object satisfies; at long temporal distance, the consumer gives more priority to whether the object can be accorded (Liberman & Trope, 1998). The former case is called feasibility of object; the latter, desirability of object (Gollwitzer & Moskowitz, 1996; Miller et al., 1960). When compared with feasibility, desirability is usually directly represented by some abstract constructs including product functions and quality. Therefore, in the case of long temporal distance, abstract constructs dominate consumer consideration. However, when it comes to short temporal distance, consumers may gradually notice other even more concrete constructs, including appearance and price. It follows that given short temporal distance, consumers focus on concrete constructs. As pointed out in previous research on Regulatory Focus, level of pain due to the failure to achieve prevention-focused or minimal object is stronger than pain caused by the failure to satisfy promotion-focused or maximal object (Idson et al., 2000). That is, when the temporal distance for a purchase decision is short, the anticipated pain caused by the failure to achieve the object will compel the consumer to prefer prevention-framed products over promotion-framed ones. Accordingly, if the temporal distance is long, pleasure due to the failure to achieve promotion-focused or maximal object is greater than that caused by the failure to satisfy prevention-focused or minimal object (Idson et al., 2000; Liberman, Idson, & Higgins, 2005). Therefore, promotion-framed products are more attractive than prevention-framed ones.

In addition, Kim, Park, and Wyer (2009) also advanced the viewpoint that different temporal constructs may cause consumers to re-valuate choices. That is, when the temporal distance is short, customers tend to select products featuring better feasibility; when the temporal distance is long, they choose those better in desirability. As seen from discussion above, previous research on consumer's decision-making under uncertain risks adopted prospect theory mainly to interpret consumer's loss aversion behavior. The core of the theory is that consumer's attitude towards perception of losses and gains will vary depending on temporal distance. In other words, while practically evaluating a product for decision, consumer's choice may vary due to the influence of short or long temporal distance. In the case of short temporal distance, the consumer emphasizes whether feasibility of the selected object can be achieved, i.e. to avert losses as much as possible. Accordingly, given long temporal distance, the consumer gives priority to whether desirability of the selected object will be accorded, i.e. to give further weight to the prospect of future gains (Gollwitzer & Moskowitz, 1996). To summarize, according to temporal construct theory, when temporal

distance is short, people stress whether such objects could be practically achieved; if the temporal distance is long, people may pay more attention to whether such product accords their object abstractness. This, due to short temporal distance, is because they are afraid of losses, and attempt to avert losses as much as possible by reducing any alternative that could lead to perception of losses. Such is the root of the loss aversion viewpoint. As a result of personal loss aversion while confronting uncertain alternatives, people are more sensitive to perception of losses, thus tending to avoid new investment. But if the temporal distance is long, people may focus on future profits and ignore the possible losses caused by depreciation, thus tending to buy new investments. On the basis of the above induction, Hypothesis 1 is formulated as follows:

H1: Where temporal distance is short, consumers attach more importance to losses; where temporal distance is long, consumers attach more importance to gains.

Influence of Temporal Distance Viewpoints on Extremeness Aversion

To further develop loss aversion theory as advanced by Tversky & Kaheman (1991), Simonson & Tversky (1992) proposed the second principle of situational influence, i.e. the extremeness aversion effect. It uses the principle of loss aversion to further advance extremeness aversion theory, on the basis of definitions from loss aversion: "for consumers, pain brought by losses prevails over pleasure resulting from gains", "consumer's sense of disgust due to losses is stronger than positive effects created by gains" and "consumers give more weight to disadvantages than to advantages". As such, ordinary consumers may follow the principles of loss aversion when making decisions, avoiding extreme options and showing preferences for medium ones. This means that in a set of choices, those located in the middle become more attractive; those at either extreme become less appealing. For example, there are three brands in a choice set. When the object brand becomes the middle alternative and is taken as the referent, losses are inevitable if the consumer selects any one of the other two brands as extreme alternatives. This makes the object brand - the middle alternative - more attractive than the other two brands, as they are viewed as extreme alternatives. Likewise, if the object brand is designed as an extreme alternative, its appeal is reduced. To put it another way, if the selected choice is at the extreme, the consumer may experience significant sense of loss upon selection, thus becoming more likely to take extremeness aversion actions. Extremeness aversion is a representation of loss aversion arising from analysis of risky and non-risk options. The losses upon outcomes lower than the referent will be given more weight, and thus prevail over the gains upon outcomes higher than the referent.

In an experiment conducted by Simonson & Tversky (1992) , three cameras differing in price were proposed: A: MINOLTAX-370 US$169.99, B: MINOLTA-MAXXUM3000i US$239.99 and C: MINOLTA-MAXXUM7000i US$469.99. If the consumer selects camera C, according to loss aversion principle, he may feel that he has lost more money; if he chooses camera A, , he feels that he has lost more quality, according to the same principle. Therefore the choice of camera B means smaller losses both for money or quality, if compared to camera A or C. From this experiment, it can be understood that consumer's behaviors trend towards aversion, and is a type of extremeness aversion. Hardie, Johnso & Fader (1993) found that the extent to which consumers avert product quality loss is greater than for money loss. In short, consumers attach greater importance to a product's defects than to its virtues. Therefore, when making purchase decisions, consumers tend to select an alternative that minimizes regrets and convinces them that the decision was correct (Zeelenberg & Beattie, 1997; Zeelenberg, Beattie, Van Der Plight & Devries, 1996). Simonson (1992) stated that as learnt from mental responses of regret after a wrong decision, this problem causes consumers to prefer buying products that are secured and unlikely to lead

to regret (e.g. well-known brands or expensive products), or less likely to purchase products involving risks (e.g. those of an unknown brand or at a low price). From this it can be seen that to a consumer making decisions, the influence of loss aversion may lead to extremeness aversion behavior. Wright (1974) also stated that when confronted with time pressure or complicated information, the decision maker is pressed for simplified decision-making. Therefore he adopts significant or important features as the basis. This has been corroborated by research which indicates that when facing highly conflicting alternatives, consumers tend to select a medium one (Simonson & Tversky, 1992).

In previous discussions on the influence of extremeness aversion, temporal distance has not been included as a factor. If taken into account, as pointed out by scholars Mogilner, Aaker & Pennington(2008) , when the timing of purchase is close to present, consumers prefer prevention-focused frame products more than those in the promotion-focused frame; if far from present, they prefer promotion-focused frame products over prevention-focused frame ones. This study hence inducts that, in the situation of short temporal distance, most subjects would use relatively concrete, low-leveled constructs to prevent losses in money and quality, and thus tend to select an medium alternative; for long temporal distance, most of them would employ relatively abstract, high-leveled constructs that compel themselves to prefer promotion-focused frame products, thus tending to decide on extreme alternatives with high quality or high price. To sum up, extremeness aversion is mainly caused by loss aversion, i.e., attaching great importance to losses. Therefore it can be further deducted from the Hypothesis 1 above that, given short temporal distance, consumers emphasize losses, leading to extremeness aversion at a higher level, and as such the possibility to select a medium alternative is higher; given long temporal distance, consumers focus more on gains, which results in lower level extremeness aversion, and thus a medium alternative is less likely to be selected, increasing the likelihood that extreme options will be chosen. On the basis of the above induction, Hypothesis 2 is formulated as follows:

H2: A short temporal distance corresponds with a higher level of extremeness aversion. A long temporal distance corresponds with consumer tendency to select medium alternatives; when temporal distance is long, the level of extremeness aversion is lower than if the temporal distance is short, and consumers tend to select extreme alternatives.

METHOD AND OUTCOME

EXPERIMENT 1

Experiment 1 aimed to discuss the influence of temporal distance on loss aversion, intended to verify that in an uncertain situation with short temporal distance, consumers tend to be unwilling to choose and buy new investment products as a result of emphasizing losses; with long temporal distance, consumers would tend to select and buy new investment products as a result of emphasizing gains.

(1) Methods

1. Design:
This experiment was designed to involve two groups (temporal distance: short vs. long). In either of the two situations, either 30% profit or 20% deficit were possibilities. The independent variable was temporal distance, and the dependent variable was the proportion to which the subject chose to buy the investment building or not.

2. Subjects:

To minimize the influence of difference in knowledge on subjects' decision-making as an experiment stimulant, this study enrolled only students as experiment subjects, to realize better homogeneity among the samples. In total, 100 students from the National Taichung University of Science and Technology took part in this experiment. There was no selection for schooling length, department, or academic sector. Gender distribution was even and randomly allocated to two groups. 50 students in total took part in tests involving short temporal distance, and the remaining 50 participated in long temporal distance tests.

3. Stimulant:

This experiment adopted as stimulant willingness to buy an investment building. In either of the two situations respectively for the two groups, 30% profit was possible, but so was a 20% deficit. The only difference was temporal distance.

4. Procedures:

This experiment involved two groups distinguished by temporal distance: short vs. long. To make the scenario feel closer to a real investment situation to compel subjects to imagine how to make decisions, and to effectively control the experiment, this study adopted a one-to-one interview format, as a means of specifying the situation, and allowing subjects to reflect on their decision out of the alternatives offered. The experiment randomly distributed 100 subjects into two experiment groups (short temporal distance vs. long temporal distance). At the beginning, they were told that this experiment aimed to understand their personal investment preferences, and that this investment was subject to external factors, leading to possible 30% appreciation or 20% depreciation. They were then instructed to adopt the temporal distance for their group, and were reminded to ignore their personal economic limits or restriction by others. Finally, each was asked to select - under the temporal situation for his/her group - whether he/she would be willing to buy the investment, explaining their rationale in writing. An identical questionnaire was given to both groups with the same questions to answer and fill-in, i.e., what they considered the temporal distance to be at the time, as measured by a Likert 5-scale form., Namely, very short (1 point), short (2 points), normal (3 points), long (4 points) and very long (5 points). In addition, to prevent subjects from learning during the experiment and affecting the outcome, two questionnaires differing in situation were given to different groups, while procedures remained the same.

5. Results:

For the manipulation verification stage, this study utilized the Independent Sample T Test to observe whether subjects at various temporal distances succeeded in temporal distance manipulation. The p value was straightly 0.000(p<.001), indicating successful verification for experiment 1. It can also be seen in Table 1 that in the case of short temporal distance (n=50), 28% (n=14) were willing to buy the investment building, and 72% (n=36) were unwilling; in the case of long temporal distance (n=50), 76% (n=38) were willing to buy the investment building, and 24% (n=12) were unwilling. It can be observed from these figures that in the case of short temporal distance, the percentage of "unwilling" (72%) was higher than "willing" (28%); in the case of long distance, the percentage "willing" (76%) was higher than "unwilling" (24%). Results of Chi-Square Test analyses show significant influence of temporal distance on the level of loss aversion (χ^2=23.077, p <.001). Therefore, H1 is established.

As indicated in Table 1 (Appendix)

EXPERIMENT2

This experiment aimed mainly to discuss the influence of temporal distance on extremeness aversion, intended to verify that in the situation of short temporal distance, consumers would tend to select medium alternatives as a result of averting extreme losses (in money or in quality); in that of long temporal distance, consumers would employ relatively abstract, high-leveled constructs to convince themselves to select promotion-focused frame products, resulting in choices of an extreme alternative (high quality or high price).

(1) Method

1. Design:

This experiment involved two groups (temporal distance: short vs. long) and a set of three alternatives, respectively (low price, low quality) vs. (medium price, medium quality) vs. (high price, high quality), to understand the proportion of subjects that select either alternative among the three, given different temporal distances. The independent variable was temporal distance, and the dependent variable was the proportion of subjects that selected either alternative among the three of a set.

2. Subjects:

To prevent subjects' decision-making from being influenced by potential difference in knowledge regarding products used as experiment stimulant, this study exclusively enrolled students as subjects, attempting to realize better homogeneity among the samples. In total, 100 students from the National Taichung University of Science and Technology took part in this experiment. There was no selection for schooling length, department or academic sector. Gender distribution was even and randomly allocated between the two groups. 50 students in took part in tests involving short temporal distance, and the remaining 50 participated in long temporal distance tests.

3. Stimulant:

This experiment adopted two products as stimulant: a watch and a handbag. Throughout testing, the brand of the stimulant products was not displayed to subjects, to eliminate the influence of brand partiality. Information presented in the set of alternatives included the watch's price and quality, and the handbag's price, with a consumer's comment. The first alternative was a low-price, low-quality product; the second, a medium-price, medium-quality product; the third, a high-price, high-quality product. Such alternatives differed significantly in price and quality, which facilitated effective discrimination by the subjects.

4. Procedures:

This experiment adopted a one-to-one interview format to specify the situation and allow subjects to reflect on their decision out of alternatives. The 100 subjects were allocated randomly to two experiment groups. In addition, to prevent subjects from learning through the process of the experiment and affecting the outcome, two questionnaires were designed for the groups, designed as follows. Group 1 question 1: long temporal distance, product: watch, stars count as standard to classify quality; Group 1 question 2: short temporal distance, product: handbag, consumer's comment servings as the standard to classify quality; Group 2 question 1: short temporal distance, product: watch, star count as standard to classify quality; Group 2 question 2: long temporal distance, product: handbag, consumer's comments as standard used to classify quality. At the beginning, subjects were told that the experiment aimed to understand their personal investment preference. Then they were instructed to adopt

the temporal distance for their group, and were reminded to ignore their personal economic limits or restriction by others. Finally, each was asked to select, according to the situation for his/her group, among the three alternatives of the set. On the questionnaire, subjects, regardless of temporal distance-related group, were required to answer the   same question: what they considered the temporal distance to be at the time of decision making, as measured by a Likert 5-scale form, namely, very short (1 point), short (2 points), medium (3 points), long (4 points) and very long (5 points).

5. Results:

For the manipulation verification stage, the *p*-value, disregarding whether the product was a watch or handbag, and disregarding temporal distance , was straightly 0.000(p<.001), indicating significant difference in subjects' decision-making between short and long temporal distance. The outcomes of tests involving watches are presented in Table 2 and 3. To make differences even more easily distinguished, this study classifies the three alternatives into two styles: extreme and medium, namely, options A, C as extreme alternatives, and option B as medium alternative. The results of Chia-Square Test analysis can be seen in Table 2 - in the case of short temporal distance (n=50), 38% (n=19) selected an extreme alternative , and 62% (n=31) selected a medium one ; in the case of long temporal distance, 68% (n=34) selected an extreme alternative , and 32% (n=16) selected a medium one . Also seen is significant influence of temporal distance on the level of extremeness aversion (χ^2=9.033, p <.003). Further, Table 3 presents results of testing involving handbags, where similarly, options A, C were presented as extreme alternatives, with option B as medium alternative. From the Chi-Square test analysis, it can be observed that in the case of short temporal distance (n=50), 34% (n=17) selected an extreme alternative, 66% (n=33) selected a medium one ; in the case of long temporal distance, 78% (n=39) selected an extreme alternative, and 22% (n=11) selected a medium one. Also observed is significant influence of temporal distance on the level of extremeness aversion (χ^2=19.643, p <.000). Therefore, H2 is established. As indicated in Table 2 (Appendix)

CONCLUSION

Loss Aversion and Extremeness Aversion have become well-established theories in the field of consumer decision-making. However, the viewpoint of consumer's temporal distance has never been included in previous research on the influence on loss aversion and extremeness aversion. This study conducted two experiments to verify the effect. Experiment 1 focused on the influence of temporal distance on loss aversion, and verified that in the situation of short temporal distance, consumers emphasized losses; for long temporal distance, consumers emphasized gains. Experiment 2 further explored the influence of temporal distance on extremeness aversion, and verified that in cases of short temporal distance, consumers tended to select a medium alternative; for long temporal distance, consumers preferred an extreme alternative. On the basis of the research results, discussion on theoretical and practical implications is presented as follows.

Theoretical Implications

The results of this study suggest that temporal distance can influence decision-makers by various psychological mechanisms. In temporal distance-related research, Mogilner, Aaker & Pennington (2008) demonstrated that the anticipated pleasure upon achievement of objectives at long temporal distance increases preference for promotion-focused frame products over those that are prevention-focused, while the expected pain upon failure of

objectives increases preference for prevention-focused frame products over those that are promotion-focused. It is implied therein that, for a purchase at short temporal distance, the consumer emphasizes losses more than gains; at long temporal distance, the consumer emphasizes gains more than losses. On this basis, the study discussed in Experiment 1 the influence of temporal distance on consumer's loss aversion. In the case of short temporal distance, people consider losses more important than gains, and are thus unwilling to buy investment, which is a prevention-focused decision; in the case of long temporal distance, people tend to employ relatively abstract, high-level constructs to represent objectives at long temporal distance, which creates favorable hypothetical imaginations of the future in their minds and further encourages people in turn to assume the risk of possible losses, and are more willing to buy investment, which is promotion-focused. The implication is that consumer's consideration of loss aversion is influenced by temporal distance.

The results of Experiment 2 imply that in the case of short temporal distance, consumers would, thanks to the psychological mechanism of extremeness aversion, worry about loss of money while simultaneously caring about loss of quality as well. This is because while a high price leads to more loss of money, a low price also means more loss of quality. Therefore, the consumer is more likely to select a medium alternative with less loss either in money or quality and further take actions categorized as extremeness aversion. However, in the case of long temporal distance, consumer actions differ from those of short temporal distance and, due to promoted self-expectation, are willing to spend more money to obtain products with higher quality.

Practical Implications

There is potential practical application in marketing, as producers may potentially influence consumer's decision-making by making available a variety of alternatives. For example, for those with short temporal distance, it is suggested that producers magnify the advantages of a product to consumers at first glance, and create a strong first impression. They can then follow with specific detailed benefits that consumers would gain from the product, and give them the chance to personally experience product functions. For example, producers may attract potential buyers of a product by means of smaller down payment or lower deductible, so that consumers are made to decide sooner, or increase their purchase budget. As another example, a producer may prefer for consumers to select a cup of coffee valued at NT$150. The results of this study should lead marketers to simultaneously promote two other products priced at NT$100 and NT$200 respectively. Because of the psychological mechanism of extremeness aversion, consumers are more likely to select the one priced at NT$150. That said, from the perspective of this study, such measures may take effect in a short period of time among current buyers, but if copied to consumers at long temporal distance, it might not be equally effective. Therefore, producers are suggested to offer other alternatives specifically for long temporal distance consumers, including discounts available upon bonus points collected and vouches drawn upon a certain amount satisfied, to stimulate their desire to buy, and thus raise their future purchases.

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APPENDIX

Table 1 Chi-Square Test Analysis for Experiment 1 (N=100)

Temporal Distance	Alternative	Count	Percentage	Chi-square	Variance	Progressive significance (twin-tail)

				value		
Short (n=50)	Willing	14	28%	23.077	1	0.000***
	Unwilling	36	72%			
Long (n=50)	Willing	38	76%			
	Unwilling	12	24%			

Note: *p < .05; **p < .01; ***p

Table 2 Chi-Square Test Analysis with Watch for Experiment 2 (N=100)

Temporal Distance	Alternative	Count	Percentage	Chi-square value	Variance	Progressive significance (twin-tail)
Short (n=50)	Extreme	19	38%	9.033	1	0.003**
	Medium	31	62%			
Long (n=50)	Extreme	34	68%			
	Medium	16	32%			

Note: *p < .05; **p < .01; ***p < .001

Table 3 Chi-Square Test Analysis with Handbag for Experiment 2 (N=100)

Temporal Distance	Alternative	Count	Percentage	Chi-square value	Variance	Progressive significance (twin-tail)
Short (n=50)	Extreme	17	34%	19.643	1	0.000***
	Medium	33	66%			
Long (n=50)	Extreme	39	78%			
	Medium	11	22%			

Note: *p < .05; **p < .01; ***p < .001