

國立臺灣師範大學管理學院全球經營與策略研究所

碩士論文

Graduate Institute of Global Business and Strategy

College of Management

National Taiwan Normal University

Master Thesis

多重背景下之脈絡效果：解釋範圍重疊模型之延伸

Context Effects under Multiple Contexts: An Extension of Dimensional
Range Overlap Model

呂則賢

Tse-Hsien, Lu

指導教授：蕭中強 博士

Adivisor: Chung-Chiang Hsiao Ph.D.

中華民國一百零一年七月

June, 2012

中文摘要

過去學者已經對於消費者如何形成產品評價，發展出許多模型。「解釋範圍重疊模型」(Chien, Wegener, Hsiao, and Petty 2010) 指出消費者對於產品的評價。受到促發物的解釋範圍以及所評價之目標物的解釋範圍，兩者之間是否重疊所影響。當兩者解釋範圍有重疊，產生同化效果 (Assimilation Effects)；無重疊則產生對比效果(Contrast Effects)。「相互假設」 (Hsiao 2002)則指出，不僅所評價之目標物會受到促發物影響，促發物同時也會受到目標物所影響。

根據前述二模型、本研究欲探討，當消費者面對兩個促發物時，目標物的評價會如何受到兩個促發物的影響。本研究假設當 1. 有兩個促發物時，兩個促發物會先相互影響彼此。 2. 而後、相互影響後的促發物，同時影響目標物。 3. 促發物或者是目標物的確定性越高則移動幅度越小；反之則越大。 4. 促發物或是目標物在受到影響後為同化效果或者對比效果，由彼此解釋範圍是否重疊所決定。

為驗證假設，主實驗採組內設計。每位受測者都需接受三階段的問卷，衡量其對產品評價的改變。第一階段、我們為各受測者找出適用的目標物與促發物，作為尚未受其他因素所影響的原始評價。第二階段則同時呈現兩促發物，觀察促發物如何彼此影響。最後、第三階段同時呈現兩促發物及目標物。測試目標物如何受到兩促發物所影響。

由於實驗流程對受測者而言，過於複雜和漫長。實驗結果並未如預期顯著支持假設。本實驗結果發現受測者多次作答後，對於產品的評價有趨中系統性移動的現象。我們推測下列原因導致此現象。1..組內受測者的實驗設計，讓受測者在多次填答問卷後，產生疲累而快速填答所致。2.多次填答問卷產生學習效果。受測者注意日常生活更加極端的產品。使得原本認

為極端的產品往中間靠近。雖目前無法驗證先前所提出之假設。但是我們仍然相信我們依據過去理論基礎所發展的假設。未來研究若能改進本研究所提到之實驗流程上之困難，便可證實目前假設。

關鍵字：解釋範圍重疊模型、促發效果、對比效果、同化效果、多重促發物、確定性、相互假設。



ABSTRACT

Consumers evaluate various products in their daily life, although they believe their judgments to be generally rational, the context in which their judgments take place nevertheless impacts the choices they make which is so-called context effects. Many researchers have since focused on the issue of the impact of single context on consumers' choice evaluation far less attention devoted to multiple contexts. However, consumers form their judgments under multiple contexts most of time. Therefore, we are interested in how contexts affect each other and further impacts product evaluation.

The present study based on the foundation of Dimensional Range Overlap Model (Chien, 2010) and Reciprocity Hypothesis (Hsiao, 2002) to extend the context effects under multiple contexts. The effects of attitude certainty under multiple contexts were also examined to better know the mechanism of consumer evaluation.

In this study, we tried to verify not only is the target judgment affected by the contextual stimulus, but the judgment of contextual stimulus is affected by the target stimulus and it is the overlap or non-overlap determines the shift direction of contexts effect. In addition, we addressed that attitude certainty dictate the magnitude of evaluation shift.

Unfortunately, the results didn't support the hypotheses we proposed, we unable

to demonstrate neither the shift direction of contexts effect is determined by overlap of ranges nor attitude certainty affects the magnitude of shift in current study. Nevertheless, we found a very interesting phenomenon which was the evaluation of contextual stimulus showed a tendency which shift toward the central of scale.

In conclusion, this thesis offer a special view to better understand the multiple contexts also provide implications to marketing executives by better understanding the underlying procedure and mechanism of priming effect.

Key words: Priming Effects, Assimilation Effects, Contrast Effects, Dimensional Range Overlap Model, Reciprocity Hypothesis, Multiple Contexts, and Attitude Certainty.

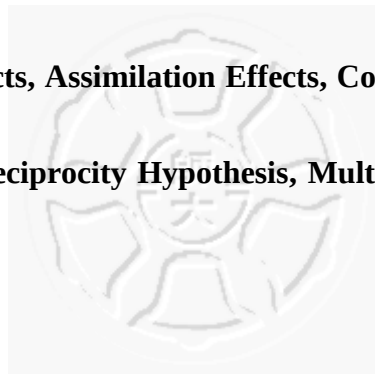


TABLE OF CONTENT

中文摘要.....	I
ABSTRACT.....	II
LIST OF TABLES.....	V
LIST OF FIGURES	VI
CHAPTER 1 INTRODUCTION	1
1.1 Motivation and Study Purpose.....	1
CHAPTER 2 LITERATURE REVIEW	4
2.1 Priming Effect	4
2.2 Contrast Effects versus Assimilation Effects.....	4
2.3 Empirical Theories of Assimilation and Contrast Effects.....	6
2.4 Comparison Relevance and the Distinction of Activated Information,1998 ...	7
2.5 The Dimensional Range Overlap Model, 2010.....	9
2.6 Reciprocity Hypothesis, 2002	12
2.7Attitude Certainty.....	14
CHAPTER 3 THEORY FOUNDATION & HYPOTHESES	15
3.1 Theoretical Background.....	15
3.2 Hypothesis.....	17
3.3 Uniqueness of the current study.....	22
CHAPTER 4 PRETEST.....	24
4.1 Pretest 1	24
4.2 Pretest 2	28
CHAPTER 5 MAIN EXPERIMENT.....	31
5.1Overview	31
5.2 Stage 1 of Main Experiment.....	32
5.3 Stage 2 of Main Experiment.....	34
5.4 Stage 3 of Main Experiment.....	36
5.5 Independent Variable	37
5.6 Dependent Variable---- Dimensional Judgment	38
5.7 Demographic Description.....	39
5.8 Results of Main Experiment	40
Chapter 6 GENERAL DISCUSSIONS AND CONCLUSION.....	49
6.1 Conclusion Review.....	49
6.2 Limitation and Suggestions.....	50
6.3 Management Implications.....	53
6.4 Future Research Directions	55
Appendix (I) Results of Pretest 1 & 2.....	57

LIST OF TABLES

Table 5.7.1 Prime Order in Main Experiment.....	39
Table 5.8.1 Coefficient and P-level of Relationship between Certainty and Magnitude of Shift.....	42
Table 5.8.2 Number of Target Overlap with Primes in Stage 1 and Stage 2.....	43
Table 5.8.3 Coefficient and P-level of Relationship between Positive Lower Bound Certainty and Magnitude of Target Shift.....	43
Table 5.9.1 A summary of the hypotheses confirmation or lack of confirmation for all samples.....	46
Table 5.9.2 Repeated Measure result for prime representative value difference in Stage 1 & 2.....	47
Table 4.1.1 Caloric Content: Mean, standard deviation, and range	57
Table 4.1.2 Sweetness: Mean, standard deviation, and range	59
Table 4.1.3 Hardness: Mean, standard deviation, and range	60
Table 4.1.4 Expensiveness: Mean, standard deviation, and range	61
Table 4.1.5 Price: Mean, standard deviation, and range	62
Table 4.1.6 Luxury of Product Brand: Mean, standard deviation, and range	63
Table 4.2.1 Caloric Content: Mean, standard deviation, and range	64
Table 4.2.2 Sweetness: Mean, standard deviation, and range	65
Table 4.2.3 Hardness: Mean, standard deviation, and range	66
Table 4.2.4 Expensiveness: Mean, standard deviation, and range	67
Table 4.2.5 Price: Mean, standard deviation, and range	68
Table 4.2.6 Luxury: Mean, standard deviation, and range	69

LIST OF FIGURES

Figure 2-1 An example of overlap between target range and range of contextual stimulus---Assimilation effects.....	11
Figure 2-2 An example of non-overlap between target range and range of contextual stimulus---Contrast effects.....	11
Figure 3-1 An example of non-overlap between both primes, two primes contrast away from each other.....	17
Figure 3-2 An example of representative value of prime shift more for those hold low certainty on representative value.....	18
Figure 3-3 An example of boundary of prime shift more for those hold low certainty on prime boundary.....	18
Figure 3-4 While participants who hold low certainty on lower boundary of the wide prime, representative value of target shift toward the overlapped wide prime.....	19
Figure 3-5 While participants who hold low certainty on lower boundary of the wide prime, upper and lower bound of target shift toward the overlapped wide prime.....	19
Figure 4-1 The rating scale of hard status in pretest.....	26
Figure 4-2 The rating scale of expensive status in pretest 1.....	27
Figure 5-1: The positive wide prime overlap with target, and the narrow prime do not overlap with target.....	38
Figure 5-5 An example of a question in which the participant first judged the representative value in (A-1) and then judged his or her individual attitude certainty toward the same representative value in (A-2).....	37
Figure 5-8.1 Mean and Shift Direction of Target and Primes under All of Sample...	40
Figure 5-8.2 Mean and Shift Direction of Target and Primes under Order 1.....	44
Figure 5-8.3 Mean and Shift Direction of Target and Primes under Order 2.....	45

CHAPTER 1 INTRODUCTION

1.1 Motivation and Study Purpose

Consumers access all kinds of products in their daily life. They attempt to form their judgments about these products without being influenced by irrelevant biases such as might come from product advertisement (e.g., Yi, 1990) or the product endorser (Petty, Cacioppo, and Schumann, 1983), etc. These factors affect consumers' judgments mutually. Although consumers believe their judgments to be generally rational, the contexts in which their judgments take place nevertheless impacts the choices they make, albeit unconsciously so.

Many researchers have since focused on the issue of the impact of context on consumers' choice evaluation. One of most remarkable theories concerns the so-called priming effects. The term "priming" can be described as an earlier contextual stimulus that activates stored knowledge and then influences evaluation to a later target stimulus. The evaluation of a target stimulus may be either assimilated toward or contrasted away from the context in which it is presented. To this day, numerous studies endeavor to elucidate how primed category affects target judgment. Several

determinants have been discovered to affect the direction of priming effects such as the target ambiguity, the extremity and the primed category (Herr et al., 1983), inclusion/exclusion model (Schwarz & Bless, 1992), and the priming attributes versus target category exemplar (Staple, Koomen, and Velthuisen, 1998), etc. But there lies apparent discrepancy on the occurrence of assimilation or contrast effect.

Among these, the “Dimensional Range Overlap Model” (Chein, 2010) provided a more generalized explanation to the occurrences of contrast and assimilation effects. Irrespective of many specific variables such as context extremity (Herr, Sherman, and Fazio 1983), target ambiguity (Herr et al. 1983), the Dimensional Range Overlap Model suggests that the direction of priming effect is dominated by whether there is an overlap between context’s and target’s ranges. When there is an overlap, assimilation occurs, whereas non-overlap will result in assimilative interpretation effects.

While numerous studies speak to how single context affects people’s target judgment, far less attention has been devoted to understanding how multiple contexts affects people’s target evaluation. Consumer face purchasing decisions under multiple environmental setting most of time, hence, we can get closer to reality if we investigate the effects of multiple primes. For present purposes, the research in the current article focuses on classifying under multiple contexts, that is, how contexts

affect each other and how multiple contexts influence a target's judgment. In this thesis, we try to explain how multiple contexts influence target's judgment mutually.

Also we would like to illustrate how contexts affect each other.

Furthermore, it is known that attitude certainty play a crucial role in consumer psychology. According to Bassili (1996), controlling for attitude valence and extremity, attitudes held with greater certainty are more resistant to change. Therefore, this article will address attitude certainty in context effects theory as well.



CHAPTER 2 LITERATURE REVIEW

2.1 Priming Effect

The priming effect has stimulated abundant interests in cognitive, consumer and social psychology, because it is known to affect the consequences of our judgment, thought and behavior. “Priming” can be defined as a previous stimulus that activates implicit memory and subsequently influences judgments to later target stimulus. Therefore, the term “priming effect” refers to the influence of priming on target evaluation. Even without awareness, the primed category still increases accessible information such that stored knowledge is more likely to be activated and to be used subsequently in processing of target information (Higgins and King 1981).

2.2 Contrast Effects versus Assimilation Effects

We can distinguish priming effects into two types, which are assimilation effects and contrast effects. In the case of a target judgment shifting toward the primer, one speaks of assimilation effects. For example, the presence of a positive context might

make a target judgment seems more positive than context free target. On the other hand, when the target judgment shifts “away” from the prime, one speaks of contrast effects. That is, the presence of a positive context might make a target judgment seem less positive than context free target. (Petty, Wegener 1992)



2.3 Empirical Theories of Assimilation and Contrast Effects

A lot of theories and model have been developed to explain what is the nature of the processes underlying these effects. There are several factors were identified as underlying determinants of whether contrast or assimilation in the literature on priming effects.

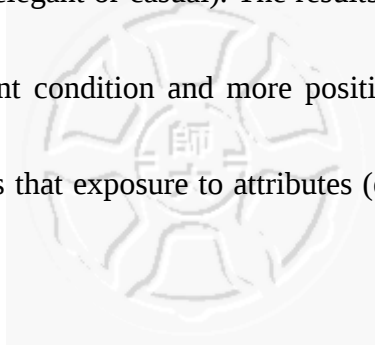
In one demonstration, Herr Sherman and Fazio (1983) suggested that target ambiguity and extremity of primed category affect the direction of priming effect. Their research demonstrated that only when high ambiguity (fictitious animal: Jabob and lemphor) and low extremity (moderate animals size) led to assimilation. Other condition led to contrast.

Meyers-Levy and Sternthal (1993) proposed two-factors explanation of contrast and assimilation. They suggested that as long as cognitive resources are substantial and there was an overlap between context and target, contrast occurs. On the contrary, while cognitive resources were limited or there was no overlap between context and target, assimilation occurs.

2.4 Comparison Relevance and the Distinction of Activated Information, 1998

According to Stapel, Koomen, & Velthuisen's research (1998), "comparison relevance and distinctness of the activated information" determined the direction of context or information accessibility effects on consumer evaluation.

In their first study, participants evaluated a target restaurant (new or familiar) after reading the attribute prime (elegant or casual). The results show that target evaluation was less positive in elegant condition and more positive in casual condition. This pattern of findings indicates that exposure to attributes (elegant or casual) may result in assimilation effects.



In study 2, participants were randomly assigned to a 2 x 2 (Exemplar Valence: Elegant, Casual x Comparison Relevance: Restaurant, Clothing Store) between participants design. After exposure to the prime cue, participants evaluated the target restaurant (new or familiar). The results show that the target (new restaurant) was less positive when elegant restaurants were primed and more positive when casual restaurants were primed, which means a contrast effect.

In their last study, a mixed prime (Both Exemplar and attribute) were conducted; participant evaluated both a new target restaurant (Dutch family restaurant) and a familiar target restaurant (AC restaurants) after exposed to prime.

In sum, from Staple and Koomen's postulation, they demonstrated that when accessible information are sufficiently comparison relevant and distinct to be used as a scale anchor, comparison contrast are more likely to occur. Conversely, while accessible information lacked for comparison relevance and distinctness, assimilation are more likely to occur.



2.5 The Dimensional Range Overlap Model, 2010

In spite of many context effects theories have been developed, the conclusions are still incongruous. However, the Dimensional Range Overlap Model (Chien 2010) offering a more comprehensive view by explained the underlying mechanism of context effects.

The Dimensional Range Overlap Model suggests that “it is perceptions of amount of overlap between the target range and the context range determines the context effects—assimilation or contrast”. When context and target ranges overlap, assimilation occurs (as more similarity between context and target), but the ranges do not overlap, contrast occurs (as less similarity between context and target). Irrespective of variables such as extremity, ambiguity, and etc.

Through three experiments, there were three main factors extracted which influenced the amount of overlap: (1) the width of target range, (2) the width of context range, and (3) relative distance between context and target. These three factors would simultaneously influence the extent of overlap and further determine the occurrence of assimilation or contrast.

In Study 1, given fixed context range width and relative distance between context and target, the target range width were either wide or narrow in order to manipulate

range overlap and non-overlap. The results were as predicted. As the wide target range width, context and target overlaps. Target and context assimilated to each other. As the narrow target range width, context and target didn't overlaps. Target and context contrasted away from each other.

Study 2 examined the effects of relative distance under given target range width and context range width. The relative distance was manipulated small or large. The results supported the Dimensional Range Overlap Model. While the relative distance was small, the context and target overlap, assimilation occurred. As the relative distance was large, the context and target didn't overlap, contrast occurred.

Similarly, Study 3 examined the effects of range overlap created by changed in the context width, given fixed target range width and relative distance between context and target. The context range width either wide or narrow. The results were as predicted. As the wide context range width, context and target overlaps. Target and context assimilate to each other. As the narrow context range width, context and target didn't overlaps. Target and context contrast away from each other.

To sum up, past researches used different type of target and context stimuli to explain what are the determinants of context effects. However, the Dimensional Range Overlap Model mainly focuses on whether context and target overlaps. In short, these variables may exert their influence on three factors as we mentioned above and

further determines assimilation or contrast.

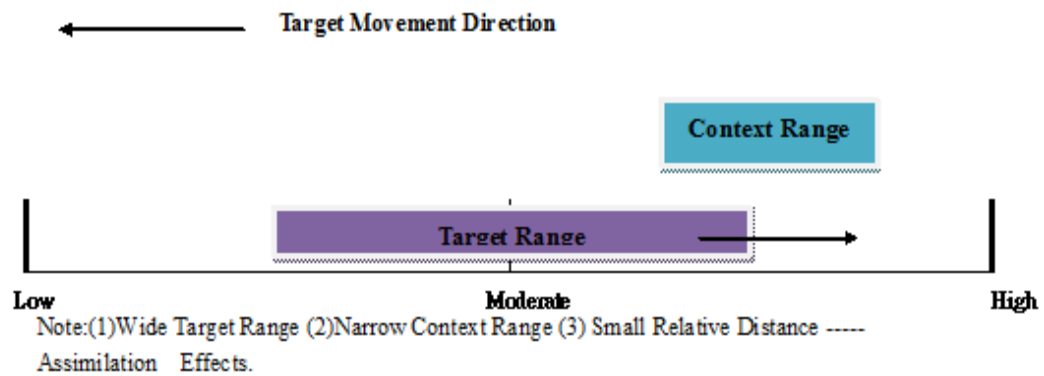


Figure 2-1: An example of overlap between target range and range of contextual stimulus----Assimilation effects.

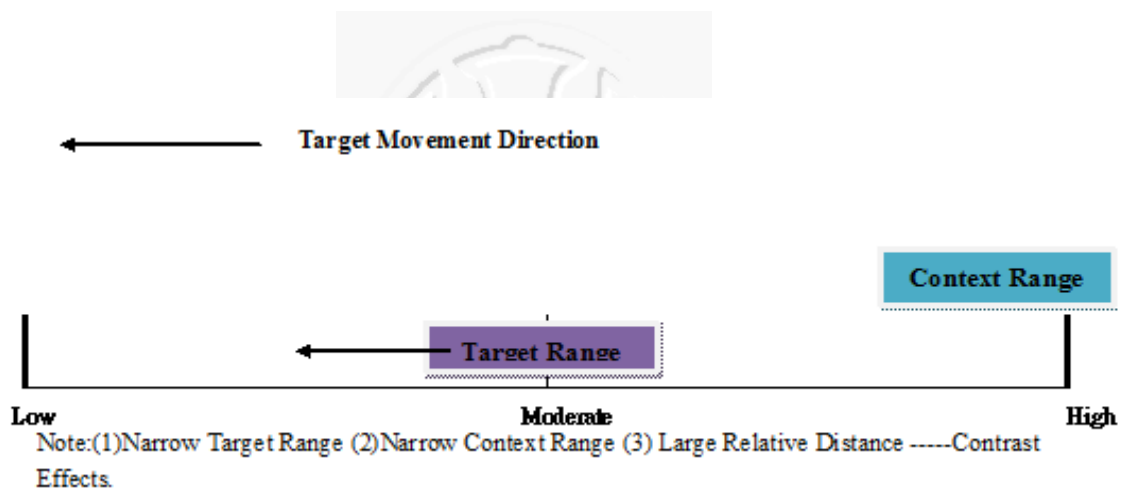
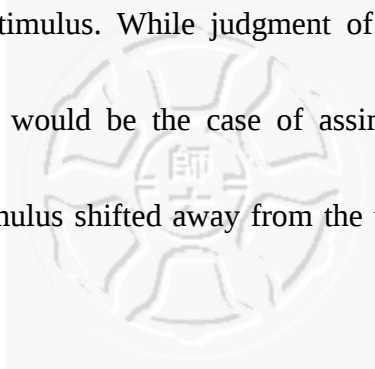


Figure 2-2: An example of non-overlap between target range and range of contextual stimulus----Contrast effects.

2.6 Reciprocity Hypothesis, 2002

Past researches in context effect solely focused on how perception of a target stimulus affected by different kind of contextual stimulus. Nevertheless, perceptions of contextual stimuli could be affected by target stimulus reciprocally. As a result, Hsiao(2010) proposed the Reciprocity Hypothesis and suggested not only is the target judgment affected by the contextual stimulus, but the judgment of contextual stimulus is affected by the target stimulus. While judgment of contextual stimulus shifted toward the target stimulus would be the case of assimilation effects. Conversely, judgment of contextual stimulus shifted away from the target stimulus would be the case of contrast effects.

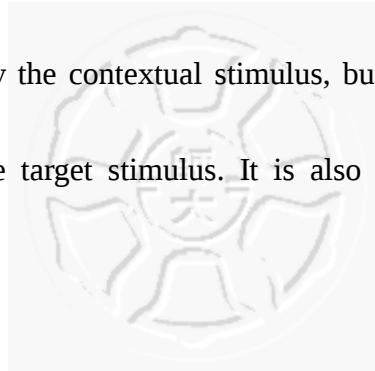


In Hsiao's(2010) study, study 1 tried to test whether contextual stimulus would be affected by target stimulus and contrast away from it. Participants were divided into three groups. Group 1 evaluated the target stimulus only ---Humorousness of The Simpsons (high-humor stimulus). The second group was asked to evaluate the contextual stimulus---Humorousness of The Schindler's List (low-humor stimulus). Group 3 evaluated both the target stimulus and contextual stimulus. There were no overlap between context and target, therefore, contrast effects were expected. After compare Group 1 (context free condition) and Group2 (target free condition) with

Group 3 (with priming condition), The results showed as predicted, contextual stimulus and target stimulus contrasted away from each other.

Study 2 was similar to study 1. However, the target stimulus (Humorousness of Jurassic Park) and context stimulus(Lion King) was selected differently. Besides target stimulus overlapped with the context stimulus, hence, assimilation effects were expected. This results shows that contextual stimulus and target stimulus assimilated toward each other. Assimilation effects were observed.

Through two experiments, the Reciprocity Hypothesis proved, again, not only is the target judgment affected by the contextual stimulus, but the judgment of contextual stimulus is affected by the target stimulus. It is also providing a new outlook to multiple contexts.



2.7 *Attitude Certainty*

Attitude certainty has been the subject of considerable research attention. Many researches demonstrated that attitude certainty do have influences on consumer judgment. For example, in Bassili research (1996), controlling for attitude valence and extremity, attitudes held with greater certainty are more resistant to change. In other case, the strength of the attitude can determine persistence over time, resistance to change, and variances in information processing and action (Krosnick and Petty, 1995).

Although many research tried to unpack attitude certainty, the question what attributes impact attitude are still disputable. Holland et al. suggested that while strength of the object-evaluation link increases, attitudes accessibility become higher. This accessibility further emerges a sense of subjective commitment.

In their study, the participants received questions basing on judgments of attitude strength after evaluating two target items and straightly asked about attitude certainty and likelihood of change. According to the results, their study argued that repeated expressions of an attitude enhanced attitude certainty and attitude accessibility compare to one-time expressions.

CHAPTER 3 THEORY FOUNDATION & HYPOTHESES

3.1 Theoretical Background

The question of whether assimilation or contrast would occur after priming became one of central importance to research on consumer psychology. According to the proposition of the Dimensional Range Overlap Model, no matter what kind of primes and targets are used, the model can be applied as long as both primes and targets are on the same dimension.

Therefore, because of the generalizability the Dimensional Range Overlap Model, the main theory foundation of this thesis will follow the proposition of the Dimensional Range Overlap Model: Irrespective of which type of target and primes, it is presence or non- presence of overlap between interpretation range of target and prime. If the Dimensional Range Overlap Model is supported again in our research under multiple contexts, we can further extended current model.

In addition, based on Hsiao's Reciprocity Hypothesis in 2002, not only is the target judgment affected by the earlier contextual stimulus, but the judgment of contextual stimulus is affected by the latter target stimulus. Thus, we presume that contexts will affect each other. Reciprocity Hypothesis provides us a broader perspective to

understand what the processes underlying these multiple context. In this thesis, we will also examine the Reciprocity Hypothesis.

Finally, Bassili (1996) suggests that controlling for attitude valence and extremity, attitudes held with greater certainty are more resistant to change. Thus, we presume that target and context judgment will shift less under higher attitude.



3.2 Hypothesis

Reciprocity Hypothesis suggests that the judgment of latter stimulus is also affected by the former stimulus. Thus, while two non-overlap primes are presented in sequence, not only the latter presented prime but also the former presented prime contrast away. Following Reciprocity Hypothesis we proposed Hypothesis 1-1.

Hypothesis 1-1: *When prime1 and prime 2 are presented in different valences and there is no overlap between two primes, prime1 and prime 2 contrast away from each other.*

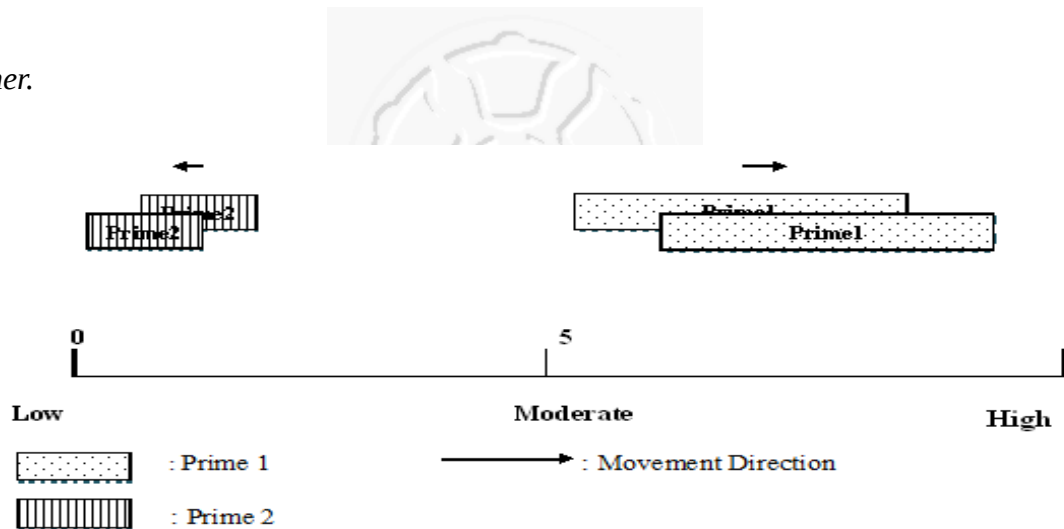


Figure 3-1: An example of non-overlap between both primes, two primes contrast away from each other.

According to Bassili's research (1996) attitudes held with greater certainty are more resistant to change. Hence, the evaluation of product shift more while hold with lower attitude certainty. We proposed the Hypothesis 1-2 & 1-3 as follow:

Hypothesis 1-2: The representative value of prime will shift more for participants who hold lower certainty than those who hold higher certainty about representative value of prime.

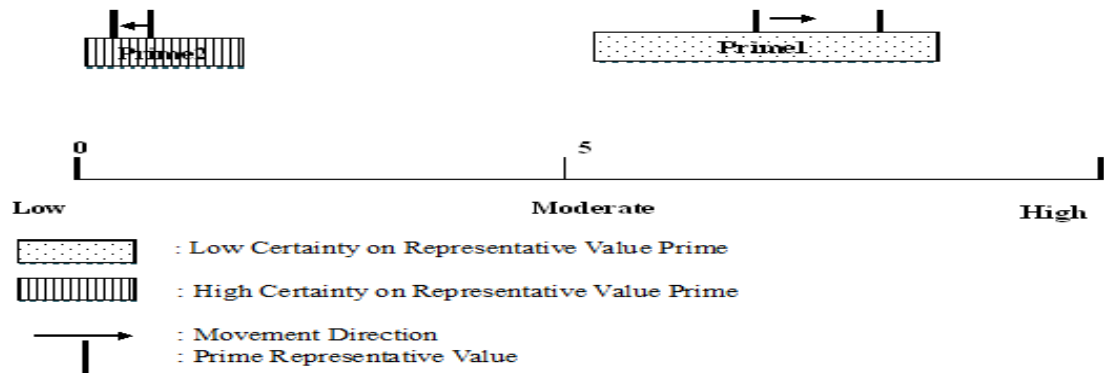


Figure 3-2: An example of representative value of prime shift more for those holding lower certainty on representative value

Hypothesis 1-3: The prime boundary will shift more for participant who hold lower certainty than those who hold higher certainty about corresponding prime boundary.

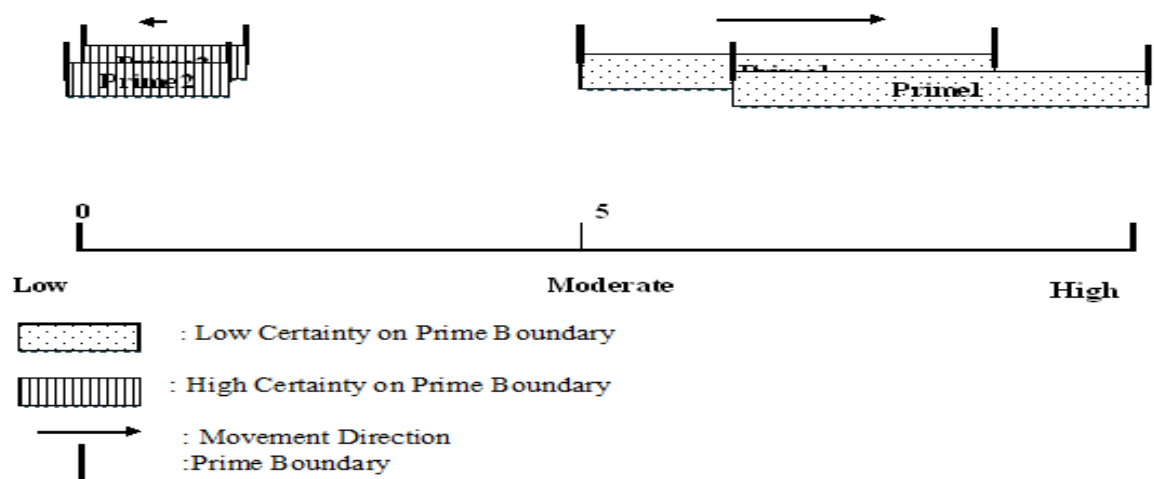


Figure 3-3: An example of boundary of prime shift more for those holding low certainty on prime boundary.

We constructed the hypothesis 2a and 2b based on the foundation of hypothesis 1-1, 1-2 and 1-3. For the condition in which presenting the positive wide prime and negative narrow prime, the primes contrast away from each other at first and the lower attitude certainty prime will shift more than the higher attitude certainty prime. Hence, for those who hold higher certainty on lower bound of the positive prime, the primed positive prime will less likely overlap with the target. With this in mind, the hypothesis 2a and 2b were developed as follow:

Hypothesis 2a: *For the condition in which the target overlaps with the positive prime and does not overlap with the negative prime initially, the representative value of target will be more likely to shift toward the positive prime for participants who hold high certainty on lower bound of the positive prime than those who hold low certainty on lower boundary of the positive prime.*

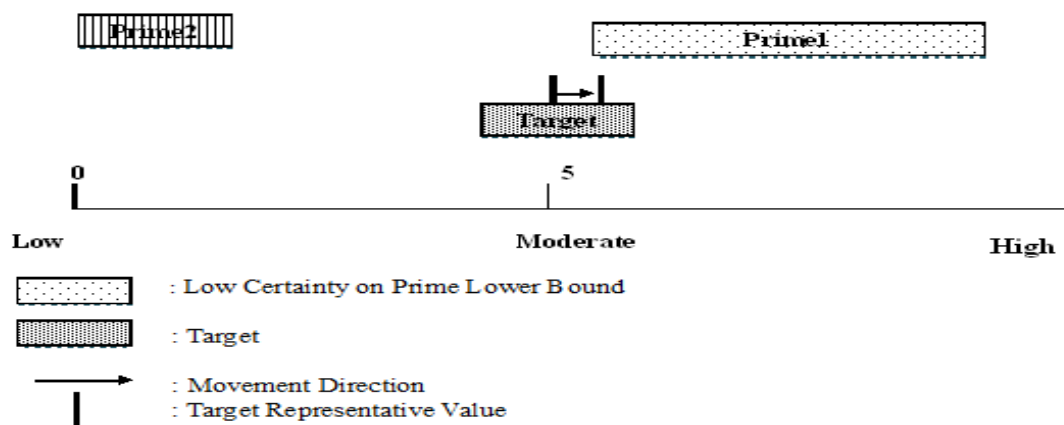


Figure 3-4: While participants who hold high certainty on lower boundary of the wide prime, representative value of target shift toward the overlapped wide prime.

Hypothesis 2b: For the condition in which the target overlaps with the positive prime and does not overlap with the negative prime initially, the target boundary will be more likely to shift toward the overlapped positive prime for participants who hold high certainty on lower boundary of the positive prime than those who hold low certainty on lower boundary of the positive prime.

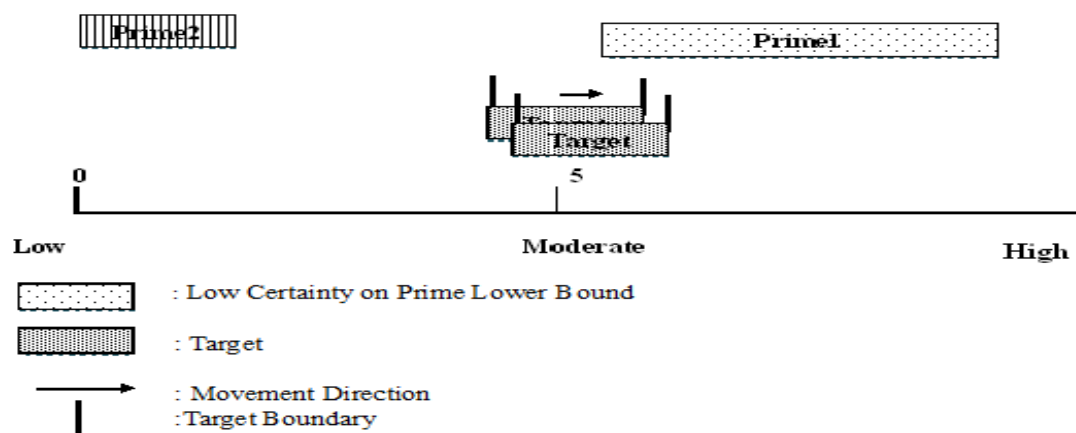


Figure 3-5: While participants who hold low certainty on lower boundary of the wide prime, upper and lower bound of target shift toward the overlapped wide prime.

According to the concept of symmetrically shifting perceptions in the Reciprocity Hypothesis, irrespective of presentation order of primes, the perceptions of primes shift symmetrically. The joint range of two primed primes is independent of the presentation order of primes. Therefore, the target perceptions are indifferent under different presentation order of primes. The hypothesis 3 are developed as follow:

Hypothesis 3: *The perceptions of target and primes are independent of the presentation order of primes.*



3.3 Uniqueness of the current study

From the above hypotheses, the most salient differences between current research and past related research are as follow:

3.3.1. Possible Range of Interpretation

Following the Dimensional Range Overlap Model, we use the interval estimate, despite of point estimate, to represent the plausible values in consumer judgment settings. Because point estimate only represent the central tendency of evaluation, however, interval estimate represent possible range of interpretation.

3.3.2. Overlap or Non-Overlap

Instead of using different kind of target and prime to explain direction of priming effect, this thesis mainly base on the Dimensional Range Overlap Model, we believe the occurrence of priming effect depends on whether there is an overlap between interpretation range of target and context.

3.3.3. Multiple Primes

Although there is a rapidly growing literature on the effects of single prime, comparatively, little research attentions has been devoted to the effects of multiple primes. In our current research, we try to classify how multiple primes affects each

other and how multiple primes create a joint effect subsequently affect the target judgment.

3.3.4. Attitude Certainty

Attitude certainty dictates the consequences of an attitude for attitude-relevant thought and action. Obviously, expressed certainty has great impact on consumers' susceptibility. Since it matters how consumers formed their own opinions, we argue that the judgment of target and primes will shift more for participant who hold with low certainty than high certainty.

3.3.5. Counter Balance of Prime Sequence

According the reciprocity hypothesis, the former stimulus also would be affected by the latter stimulus. That is the sequence of prime won't affect the perception of primes. Thus, in current research, we try to test whether there is a Sequence Effects.

CHAPTER 4 PRETEST

4.1 Pretest 1

4.1.1. Purpose of Pretest 1

In order to select the suitable dimensional range of target and primes materials in different dimensions we conducted the pretest 1 in advance to prepare the subsequent main experiment.

4.1.2. Design of Pretest 1

In pretest 1, six different dimensions which the college students might be familiar to were selected, which are “Calorie of Food”, “Sweetness of Food”, “Hardness of object”, “Expensiveness of Product Brand”, “Price of Product”, and “Luxury of Product Brand”. Each of dimensions contains 28 — 34 items. Five groups were set for dimensional items in each dimension as follow:

“Negative Narrow was set from 0 - 2”

“Negative Wide was set from 0 - 5”

“Moderate was set from 4 - 6”

“Positive Wide was set from 5 - 10”

“Positive Narrow was set from 8 – 10

Each participant was tested on two unrelated dimensions to minimize interference.

“Caloric Content of Food” was paired with “Luxury of Product Brand”; “Hardness of Object” was paired with “Price of Product Brand”; and “Sweetness of Food” was paired with “Expensiveness of Product Brand.”

We presented the least influence two primes at first which expected to be rated as the extremely high and the extremely low items. For instance, for the dimension “Expensiveness of Product Brand”, the “Dollar Store” (extremely low prime) and “Ferrari” (extremely high prime) were presented first. The third prime given in the questionnaire was one expected moderate--for example “The apps in iTunes Store“.

The order of rest of primes was randomized to diminish the influence of other unexpected context effects.

4.1.3. Procedure of Pretest 1

70 National Taiwan University undergraduate and graduate students were recruited to the classroom and seat individually. Upon entering the classroom, each participant was told that he or she would be participating in three independent researches and would be given three questionnaires.

In the first booklet, participants were told they were participating in a college student’s perception toward daily products research. Participants were asked to evaluate some items in aforementioned dimensions. For each item, two questions were asked. Participants were asked to give a score to best represent the evaluated items on a 0

(e.g. Least hard) to 10 (e.g. most hard) scale in intervals of 0.5. In addition, they were asked to give a lowest bound and a highest bound to indicate the interpretative range for items on the same scale. Finally, subjects were asked which items they are not totally familiar with.

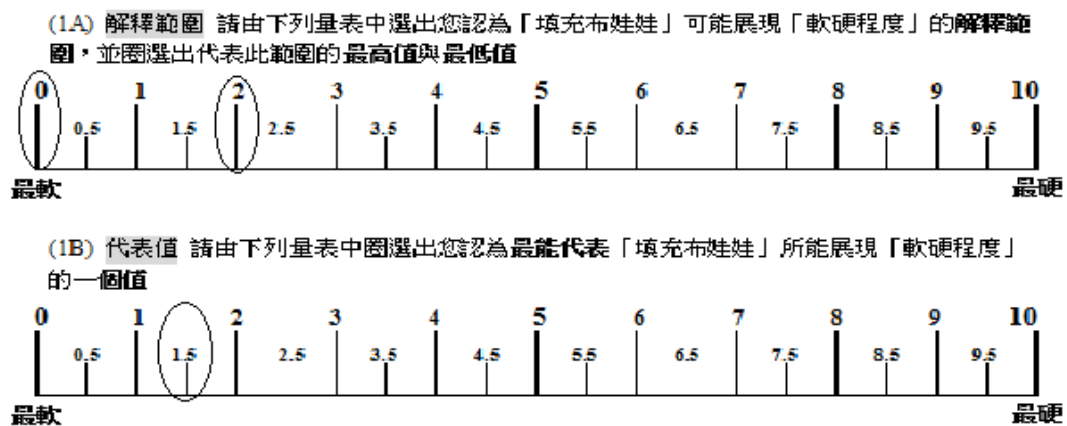


Figure 4-1 The rating scale of hard status in pretest.

The second booklet was designed to interrupt the connection between first and third questionnaire. Participants were asked to read two jokes and evaluate how humorous of these two jokes.

The third booklet was similar to first questionnaire; however, in order to minimize the connection from first questionnaire, the font was designed differently. Participants were told they were participating in a college student cognitive research. Similarly, each of participants were asked to evaluate the representative value and interpretative range of items in another certain dimensions on a scale from 0(e.g. Least expensive) to 10(e.g. Most expensive).(See Figure 4-2) After finishing all tasks, subjects are

thanked and dismissed.

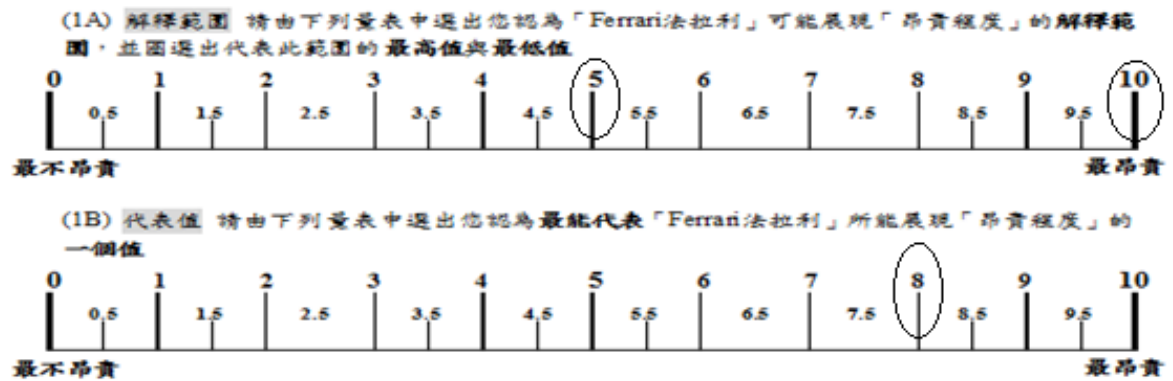


Figure 4 – 2 The rating scale of expensive status in pretest 1.

4.1.4. Result of Pretest 1

Through pretest, the mean and standard deviation of each brand and item were showed in Table 4.1.1 to Table 4.6.2 in appendix (I). In each dimension, we selected a target item which are “expensiveness of Hitachi 日立”, “luxury of Dell 戴爾”, “hardness of 各種跑道”, “calories of 饅頭” and “price of 印表機”. Based on the results of pretest 1 we could find some proper items that could be used in following main experiment. Nevertheless, pretest 1 didn’t provide proper target item on sweetness dimension.

4.2 Pretest 2

4.2.1. Purpose of Pretest

Due to Pretest 1 didn't provide a proper target item on sweetness dimension and many items failed to match our groupings, Pretest 2 was conducted. In pretest 2, we tried to confirm whether the items of Pretest 1 were suitable in each dimensions. Also some new items were added in Pretest 2.

4.2.2. Design of Pretest 2

The design of Pretest 2 was same as Pretest 1. Each of participants was received three booklets, and tested two dimensions separated by a booklet about joke.

4.2.3. Procedure of Pretest 2

Similarly, the procedure of Pretest 2 was same as Pretest 1. 64 National Taiwan University undergraduate and graduate students were recruited in Pretest 2. Upon entering the classroom, participants were led to seats separately. Each participant was told that he or she would be participating in three independent researches and would be given three questionnaires subsequently after they finished their questionnaires in their possession.

In the first booklet, participants were told they were participating in a college student's perception toward daily products research. Participants were asked to evaluate some items in aforementioned dimensions. For each item, two questions were

asked. Participants were asked to give a score to best represent the evaluated items on a 0 (e.g. Least hard) to 10 (e.g. most hard) scale in intervals of 0.5. In addition, they were asked to give a lowest bound and a highest bound to indicate the interpretative range for items on the same scale. Finally, subjects were asked which items they are not totally familiar with.

The second booklet was designed to interrupt the connection between first and third questionnaire. Participants were asked to read two jokes and evaluate how humorous of these two jokes.

The third booklet was similar to first questionnaire; however, in order to minimize the connection from first questionnaire, the font was designed differently. Participants were told they were participating in a college student cognitive research. Similarly, each of participants were asked to evaluate the representative value and interpretative range of items in another certain dimensions on a scale from 0(e.g. Least expensive) to 10(e.g. Most expensive). After finishing all tasks, subjects are thanked and dismissed. In the last part, subjects were asked which items they are not totally familiar with.

4.2.4. Result of Pretest 2

The mean and standard deviation of each brand and item were showed in Table 4.2.1 to Table 4.2.6 in appendix (I). Because it is difficult to find the most ideal interpretative range of target from 4 – 6, the range of item from 3 – 7 were also

acceptable to our target. The target item on sweetness dimension was founded in Pretest 2 which is matcha tea latte (抹茶拿鐵). Moreover, part of new added items in Pretest 2 were more appropriate than existing items from Pretest 1 with lower standard devaluation, some new-added items replaced those items.



CHAPTER 5 MAIN EXPERIMENT

5.1 Overview

Regarding to the information as we mentioned in the previous chapters, in main experiment we examined all of our hypotheses. The main experiment was between-participants design, and was divided into three stages.

In stage 1, we tried to determine the most proper target and primes for each participant, in addition, participants were asked to report their certainty toward the representative value and item boundaries.

In stage 2, the reciprocity hypothesis was examined. Two primes ,positive wide prime and negative narrow prime, were presented in sequence either positive wide prime first or negative narrow prime to observe the interaction between two primes.

In stage 3, we examined how target would be affected by two primes. Two primes and target were presented simultaneously and participants were asked to evaluate the representative value and interpretative range of target (upper and lower bound).

5.2 Stage 1 of Main Experiment

5.2.1 Participant and Design in Stage 1

95 Undergraduate and graduate students from National Taiwan Normal University participated the first stage of the main experiment.

For later use, we tried to identify suitable target and two primes for each participant according to the grouped items from pretests, and the primes were set positive wide prime and negative narrow prime. In addition to six dimensions in the pretests, three other irrelevant dimensions were added to disturb participants' awareness to our study propose – “Warmth of Objects,” “Volume,” and “Degree of Humor”.

In the first week, we presented six expected target items and three filtering items. All of items in first week were anticipated that the participants would give interpretative range from 3 - 7 with a representative value as 5. Each of participants would be selected two of dimensions at most to complete our following experiment depending on whether their target interpretative ranges were rated from 3 – 7 in each dimension.

5.2.2 Procedure of Stage 1

At the beginning, Subjects were told they are participating in 5 independent consumer behavior relevant researches in successive seven weeks.

In the first week, participants received a questionnaire and were presented six targets and three filter items. The questionnaire in first week included three parts. The first part showed the instructions; the second part was practice questions; and the last part contained 9 items. For each of item, five questions were asked. Participants were inquired to evaluate representative value, upper and lower bounds. Additionally, they were asked to report their certainty toward three corresponding evaluations. In the last part of questionnaire, they were asked to choose which items they were not familiar with.

Because part of participants didn't provide the suitable range answers we need; the participant pool was thereby limited week by week.

During the second week, participants were presented and asked to evaluate five positive wide range primes in selected dimensions. Similarly, participants were be presented and asked to evaluate five negative narrow range primes in third week.

5.3 Stage 2 of Main Experiment

5.3.1 Participant and Design in Stage 2

After two weeks from Stage 1, the screened participants were continued to the stage 2 of main experiment. Stage 2 was conducted for two main proposes. One was for examining the reciprocity hypothesis. And the other was for observing the primed joint range of two primes to determine whether there is an overlap between the joint range of two primes and the context free target. With knowing that, we can further predict the shift direction of target.

In this stage, participants were randomly assigned to two orders, either positive wide prime first or negative narrow prime first.

5.3.2 Procedure of Stage 2

At the beginning, participants were given individualize questionnaire which were designed differently based on the results they provided in Stage 1.

The questionnaire in this stage also consisted of three parts. Again, the first part showed the instructions; the second part was practice questions. In the last part, participant were presented one or two dimension(s) ,depending on whether he or she provided sufficient proper target and prime range we need in stage 1, and two filtering dimensions. The certain dimensions were be separated by two filtering dimension in case coming to other effects. For each of dimension, participant would be asked to

envisage the first prime thoroughly and then presented the other prime.

After that participants were asked to give the representative value and upper and lower bounds of the latter prime. The next page showed the first prime again and asked participants to give the representative value and upper and lower bounds of the first prime.



5.4 Stage 3 of Main Experiment

5.4.1 Participant and Design in Stage 3

Stage 3 was conducted after two weeks from stage 2 and was designed to examine how primes affect target judgment.

Design of Stage 3 was same as Stage 2. Similarly, Stage 3 consisted of three parts: instruction, practice problems and the measure question sets. For each participants, one or two dimension(s) were tested with interval of two filtering dimension. They were asked three questions in each dimension.

5.4.2 Procedure of Stage 3

Participants were given individual questionnaires. Students saw two primes at the beginning and were required to envisage primes thoroughly. After that the target was presented, and participants were asked to evaluate the representative value, upper and lower bound of target items.

5.5 Independent Variable

Attitude certainty

All participants were asked to report their attitude certainty on the corresponding representative value, upper and lower bound to both of primes and target in Stage 1.

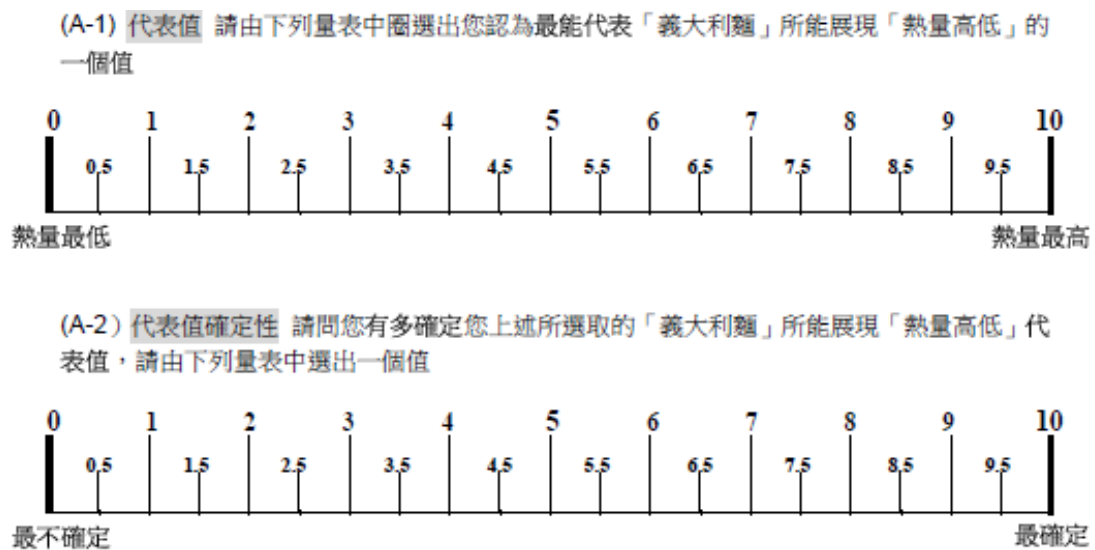


Figure 5-5 An example of a question in which the participant first judged the representative value in (A-1) and then judged his or her individual attitude certainty toward the same representative value in (A-2).

Prime Sequence

Two Primes were presented in different order among participants, in order to examine whether there is a sequence effect.

Prime Range Width

Through the pretest, we set the range of 5-10 on a scale ranging from a 0 to 10 scale for an overlapped prime range which is set to overlap with the target's range. On the other hand, we set a range of 0-2 for a non-overlapped prime range which is set

not to overlap with the target's range. (See figure 5-1).

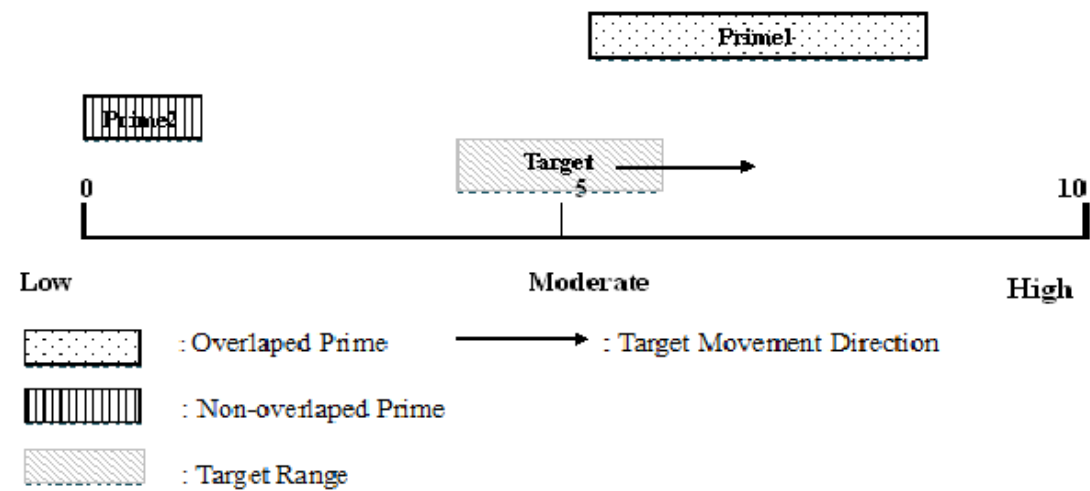


Figure 5-1 The positive wide prime overlaps with target, and the narrow prime does not overlap with target.

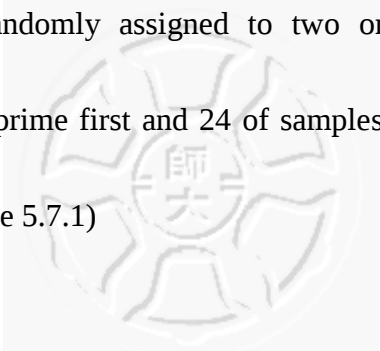
5.6 Dependent Variable---- Dimensional Judgment

All participants were asked to measure their perception toward the target and primes item in certain dimension by two perspectives, including the representative value to best represent the target, and lower, upper bound to best represent the interpretative range in the main experiment. We measure the context free target and primes in Stage 1, the primed primes in Stage 2, and primed target in Stage3

5.7 Demographic Description

There were total 95 graduate and undergraduate students participate in main experiment. 31 students didn't finish all of procedures who absence from attendance during the main experiment, and 30 students didn't provide suitable range of prime and target. Finally 34 participants were reserved. Among of reserved students, 13 took 2 dimensions and 21 took 1 dimension, hence, the sample size is 47.

All of samples were randomly assigned to two orders. 23 of samples were presented in positive wide prime first and 24 of samples were presented in negative narrow prime first. (See table 5.7.1)



Order	N(Numbers of Sample)
Order 1 (Positive prime first)	24
Order 2 (Negative prime first)	23
Total	47

Table 5.7.1 Prime order in main experiment

5.8 Results of Main Experiment

5.8.1 All Samples

In order to examine the proposed hypothesis 1-1, we compared the average score of initial primes (Stage 1) to primed primes (Stage 2). The results showed that the representative value, high and low bound of negative prime were not contrast away from positive prime. ($M_{LB} = 1.25 \rightarrow M_{LB} = 1.61$, $P = 0.05$; $M_{RPV} = 2.09 \rightarrow M_{RPV} = 2.38$, $P = 0.10$; $M_{UB} = 3.13 \rightarrow M_{UB} = 3.47$, $P = 0.14$). Aside from this, positive prime assimilated toward negative prime. ($M_{LB} = 5.29 \rightarrow M_{LB} = 5.47$, $P = 0.36$; $M_{RPV} = 7.05 \rightarrow M_{RPV} = 6.47$; $M_{UB} = 8.29$, $P = 0.00 \rightarrow M_{UB} = 7.68$, $P = 0.11$). The hypothesis 1.1 was not confirmed, that is, the primes weren't contrast away from each other as expected.

(See Figure 5-8.1)

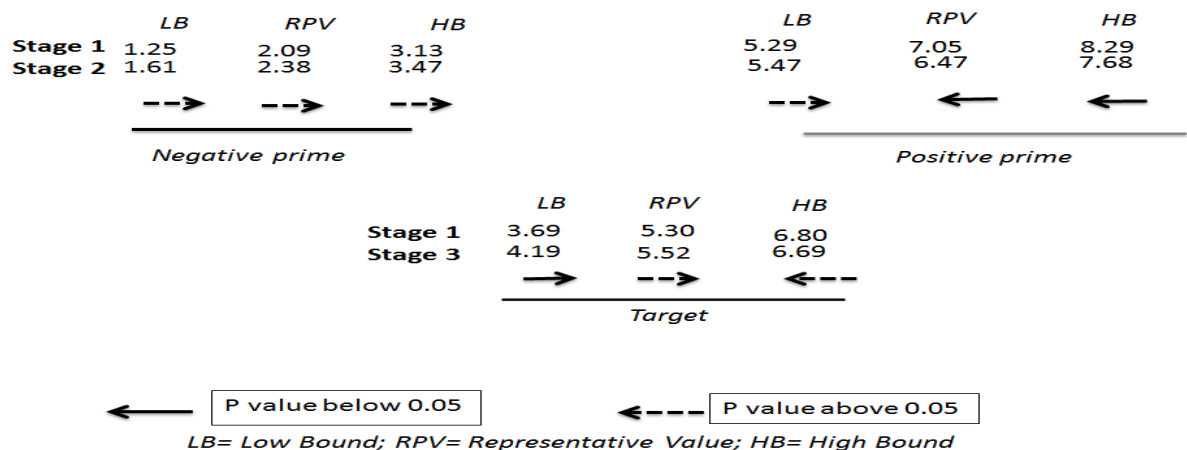


Figure 5-8.1 Mean and shift direction of target and primes under all of samples

To rule out weather certainty affects the magnitude of shift which is the hypothesis 1-2 and 1-3. We applied regression to analyze the relationship between certainty and magnitude of shift. The coefficient and P level is shown in table 5.8.1. The relationship between certainty and magnitude of shift wasn't statistically significant and didn't show any specific pattern as well. Thereby, the hypothesis 1-1 and hypothesis 1-2 were not confirmed.



		Magnitude of shift	Beta	T	significant
All Samples	Prime 1	RPV	.05	2.98	.73
		High bound	-.16	3.71	.29
		Low bound	-.03	2.59	.84
	Prime 2	RPV	-.24	3.81	.11
		High bound	-.08	2.50	.60
		Low bound	-.12	3.24	.42
Order 1	Prime 1	RPV	-.12	3.42	.60
		High bound	-.30	3.22	.18
		Low bound	.15	1.29	.96
	Prime 2	RPV	.39	-0.48	.08
		High bound	.00	1.72	.96
		Low bound	-.15	2.76	.52
Order 2	Prime 1	RPV	.28	0.48	.11
		High bound	.00	1.88	.997
		Low bound	-.10	2.75	.61
	Prime 2	RPV	.11	0.96	.62
		High bound	-.22	2.29	.30
		Low bound	-.20	2.82	.35

Table 5.8.1: Coefficient and P-level of the relationship between certainty and magnitude of shift.

Stage	Stage 1	Stage 2
	(Context Free)	(After Priming)
Number of Target Overlap with Negative Prime	0	11
Number of Target Overlap with Positive Prime	47	47

Table 5.8.2 Number of target overlap with primes in Stage 1 and Stage 2

The Table 5.8.2 shows that all of target overlaps with the positive wide prime in stage 2 irrespective of positive prime lower bound certainty that is lower bound of positive prime didn't shift more for participant who held lower certainty on lower bound. Through the regression, the lower bound certainty of positive prime didn't affect the magnitude of target shift either representative value or boundary. (See Table 5.8.3) Thereby, hypothesis 2a and hypothesis 2b were not confirmed.

Magnitude of Shift	B	P-value
Target Representative Value	-.062	.680
Target Upper Bound	.133	.373
Target Lower Bound	-.014	.924

Table 5.8.3 Coefficient and P-level of relationship between positive lower bound certainty and magnitude of target shift

5.8.2 Order 1 (Positive Prime First Presented)

To further investigate an effect of prime order, we analyzed order-separated data. For the participants presented positive prime first (order 1), the representative value, high and low bound of negative prime didn't contrast away from positive prime. ($M_{LB} = 1 \rightarrow M_{LB} = 1.34$, $P = 0.77$; $M_{RPV} = 1.75 \rightarrow M_{RPV} = 2.11$, $P = 0.60$; $M_{UB} = 2.84 \rightarrow M_{UB} = 2.93$, $P = 0.16$). Similarly, positive prime didn't contrast away from negative prime as well. ($M_{LB} = 5.34 \rightarrow M_{LB} = 5.41$, $P = 0.07$; $M_{RPV} = 6.84 \rightarrow M_{RPV} = 6.73$, $P = 0.19$; $M_{UB} = 8.23 \rightarrow M_{UB} = 7.87$, $P = 0.76$). (See figure 5-8.2) Again, the hypothesis 1.1 was not confirmed.

The regression analysis also revealed that there is no evidence to support certainty made an impact on magnitude of shift under order 1. (See table 5.8.1) Hypothesis 1-2 and 1-3 were not confirmed.

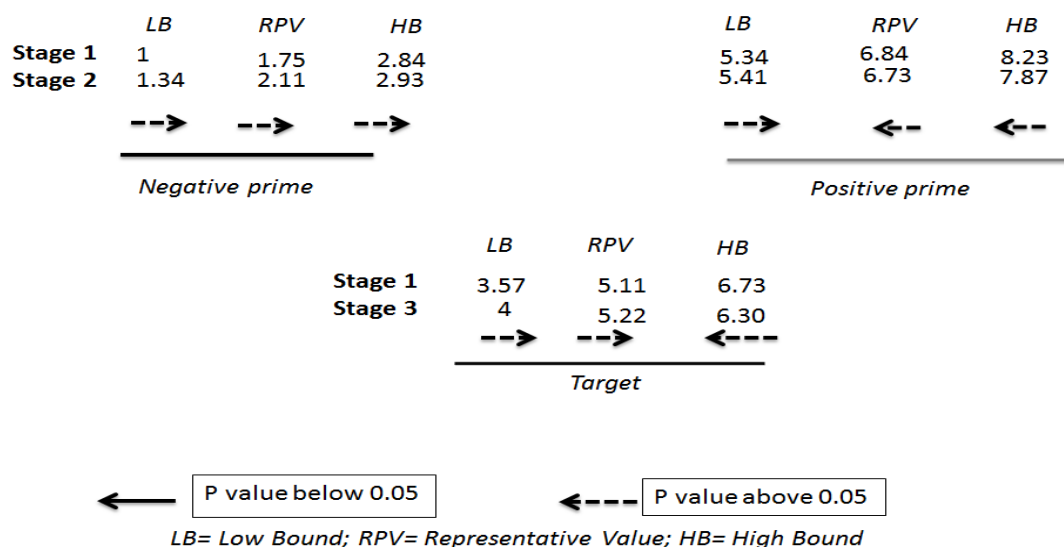


Figure 5-8.2 Mean and shift direction of target and primes under Order 1

5.8.3. Order 2 (Negative Prime First Presented)

On the other hand, for the participants presented negative prime first (order 2), the representative value, upper and lower bound of negative prime didn't contrast away from positive prime. ($M_{LB} = 1.46 \rightarrow M_{LB} = 1.84$, $P = 0.23$; $M_{RPV} = 2.38 \rightarrow M_{RPV} = 2.62$, $P = 0.33$; $M_{UB} = 3.38 \rightarrow M_{UB} = 3.94$, $P = 0.11$). However, positive prime assimilated toward negative prime which was against our hypothesis 1-1,. ($M_{LB} = 5.24 \rightarrow M_{LB} = 5.52$, $P = 0.38$; $M_{RPV} = 7.24 \rightarrow M_{RPV} = 6.24$, $P = 0.00$; $M_{UB} = 8.34 \rightarrow M_{UB} = 7.52$, $P = 0.00$). (See figure 5-8.3) Again, the hypothesis 1.1 was not confirmed.

The regression analysis revealed that there is no evidence to support the influence of certainty on magnitude of shift. None of any point estimator reached significance. (See table 5.8.1) Hypothesis 1-2 and 1-3 were not confirmed.

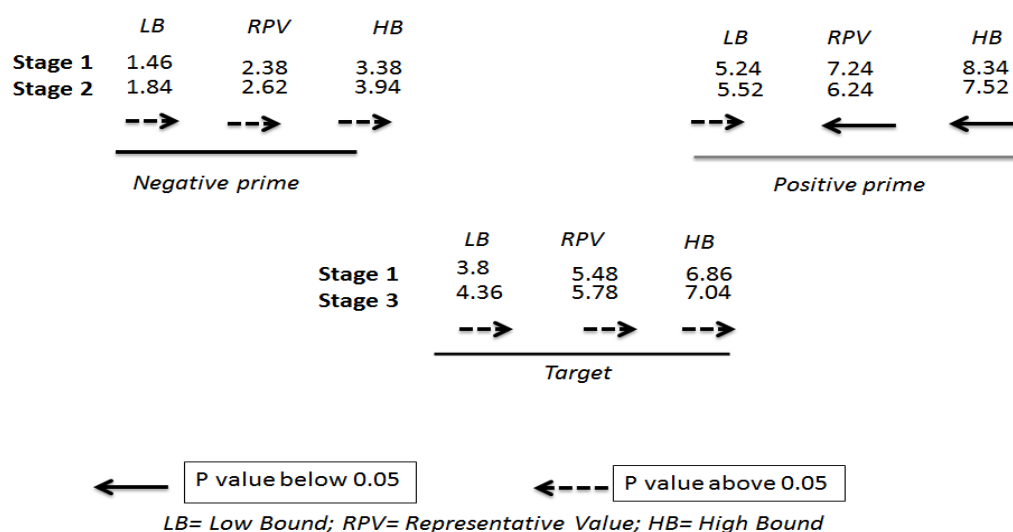


Figure 5-8.3 Mean and shift direction of target and primes under Order 2

5.9 Discussion

The results show that two primes didn't contrast away from each other. While narrow prime presented first (order 2), the positive prime even assimilated toward negative prime. In addition, all of point estimator of primes showed a tendency to shift toward the central of scale---5, that is, the results in our experiment against the reciprocity hypothesis.

Besides, no matter which prime was first presented, the results didn't shows any difference. Thereby, we can conclude that there was no order effect observed. The hypothesis 3 was confirmed.

Hypothesis	Findings	Result
1-1	Prime didn't contrast away from each other.	Unconfirmed
1-2	Certainty had no impact on magnitude of representative shift	Unconfirmed
1-3	Certainty had no impact on magnitude of boundary shift	Unconfirmed
2a	Lower bound certainty of positive prime didn't affect the magnitude of target shift	Unconfirmed
2b	Lower bound certainty of positive prime didn't affect the magnitude of target shift	Unconfirmed
3	Ordering is inconsequential	confirmed

Table 5.9.1 A summary of the hypotheses confirmation or lack of confirmation for all samples.

However, there's a tendency for representative value & upper/ lower bound of the two primes to shift toward central of the scale. This kind of systematic shift and priming effects affects the judgments simultaneously which might be the potential explanation of the reason why we unable to confirm our hypotheses.

To investigate the influence of systematic shift, a new method was adopted to analyze the distance between two primes. First, the distance between representative values of two primes from stage 1 is calculated (context free condition), and the difference between the representative values of prime 1 & 2 from Stage 2 is also calculated (priming condition).

While points of prime is only affected by the systematic shift, both of prime shift toward the central of scale. Therefore, the distance between two representative values in stage 2 shall be lesser than in stage 1; if not, there are other factors influencing their shift, which might come from the priming effect. Hence, we use repeated measure ANOVA to compare the initial distance and the primed distance.

	Mean	STDV	F	Significant
STAGE 1	5.85	1.35	27.62	.000
STAGE 2	4.65	2.02		

Table 5.9.2 Repeated Measure result for prime representative value difference in Stage 1 & 2

The result is significant (See table 5.9.2) and suggests that the distance between two primes in stage 2 is less than the distance between two primes in stage 1. The effects of systematic shift are confirmed. However, we are not sure about whether there are other factors influencing prime shift. The effects of systematic shift might too strong to dominate over other effects such as priming effects.



Chapter 6 GENERAL DISCUSSIONS AND CONCLUSION

6.1 Conclusion Review

The results in our current experiment didn't support the hypotheses derived from the DROM and reciprocity hypothesis. First, while presented two non-overlap primes, the high bound, low bound and representative value of primes didn't move in the opposite direction from each other. The hypothesis 1-1 was not confirmed.

Second, the results also reveal that there is no evidence to support certainty made an influence on magnitude of shift. The prime of lower attitude certainty didn't shift more than the prime of higher attitude certainty both representative value and high and low bound. The hypotheses 1-2 and 1-3 were not confirmed.

Third, the lower bound of positive prime didn't shift less for participants who hold higher certainty on lower bound of positive prime; the primed positive prime overlaps with target for all samples irrespective of the certainty. The lower bound certainty of positive prime didn't have any influence on magnitude of target shift as well. As a result, the hypotheses 2a and 2b were not confirmed.

Finally, the order effect was not observed. Either order 1 or order 2 shows the same results. We demonstrated hypothesis 3.

6.2 Limitation and Suggestions

6.2.1. Limitation

As we demonstrated in earlier chapter, present experiment unable to demonstrate that two non-overlap prime would contrast away from each other. That is, the reciprocity hypothesis was failed to reconstruct. Additionally, the impacts of attitude certainty on magnitude of shift were failed to verify as well. We concluded following inference to explain these outcomes.

Systematic Shift

Participants seem to be affected by other factor aside from priming effects. The shift direction of two prime shows sort of systematic shift to the central of scale which is not consists to the reciprocity hypothesis. We believe the results in the main experiment reflect the integral effect of systematic shift and priming effect, and the systematic shift wore down priming effect. As a result, the reciprocity hypothesis didn't observe as expected. We infer that several reasons may lead to this phenomenon.

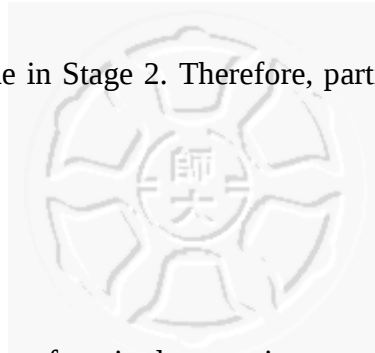
Fatiguing Procedural design

The between-participants design induces the long duration of procedure. In the main experiment, all participants were repeatedly required to finish five 15-minnute long questionnaires in seven weeks. Participants were tired of the experiment in the

end. The fatigue led to participants want to complete it quickly which result in people tend to give a moderate answers and just regard these items as ambiguous ones. When giving a moderate score, participants don't need to make too many efforts to envisage the items thoroughly.

Learning process

It takes seven weeks to finish the whole procedure of main experiment. After finished first stage of the main experiment, participants may notice that some items were more extreme in their dairy life. This kind of learning process leads the initial extreme primes less extreme in Stage 2. Therefore, participants gave more moderate scores.



Suspect certainty

Because the measure of attitude certainty was self-reported, the scores participants answered to certainty may not their true attitude. They may have evaluated their individual certainty without careful thought. For instance, part of participants checked unfamiliarity to an item with high certainty. The contradictory answer brings distrust to reported certainty; we unable to unveil their true certainty.

6.2.2. Suggestions

Mixed-Participants Design

Even though the within-participants design in main experiment could diminish

individual difference in product item perceptions among participants, it still caused following problems: the whole experimental procedure was too long. Participants tried to continue the research in the end. To avoid this situation, mixed-participants designs will more ideal than within-participants design which would be shortening the time

Manipulation Check

Current research didn't examine the manipulation check because we believe the answers provided in Stage 2 can truly reflect the joint range of two prime which can further determine whether there is an overlap between primes and target. However, the joint range of two primes may be different from Stage 2 to Stage 3, thereby, the experiment will more precise with manipulation check.

Higher Incentives

Participants were lack of motivation to finish the whole procedure because it was too long and tiresome compare to the little incentive they received. Under this situation, participants were not willing to put too many efforts. Offering higher incentives such as credits or a draw of high amount gift vouchers can improve it.

6.3 Management Implications

The multiple contexts effects explained choice-relevant inferences from the stimulus. We try to extend the Dimensional Range Overlap Model by providing a more intact perspective to illustrate the underlying mechanism for multiple contexts; it offers some marketing and management implications.

In most of condition, consumers are exposure to multiple primes rather than single prime when they make their judgments. Therefore, current research is more close to reality when consumer form their evaluation and can actually apply to many scenario especially while consumer facing many environmental setting. By understanding the black box of the consumer evaluation process under a complicated environmental settings, marketer can influence consumers' perception by manipulate the contextual information and attitude certainty. Thus, marketer can easily draw up a more precise marketing strategy.

For example, marketers can manipulate consumers' attitude certainty by hiring a credible celerity for a well-known quality product brand so that consumers' perception toward the brand could more uneasy to change.

Or according to an expected interpretation range of the brand or the product segment, marketers can easier to determine the most optimal store location in a comprehensive shopping mall; the most optical shelf place in the store; and the most

suitable advertising place within a magazine by the interpretative range of product basing on the external contextual environments.

6.4 Future Research Directions

Present research tried to demonstrate that the attitude certainty will influence the magnitude of shift after judgment affected by other primes. Base on the foundation of Dimensional Range Overlap Model, Reciprocity Hypothesis, and attitude certainty relevant literatures we developed our condition to examine the hypotheses we proposed. Because of the limitation of experimental design, we unable to verify our hypotheses as expected, however, many interesting issues remain can be further discovered.

On one illustration, researchers can pay more attention on the role of fatigue in multiple contexts. In our research, the fatigue interpreted the mechanism of priming effects. Future researchers can further investigate this phenomenon.

Besides, the systematic shift in our research also provided us some sight in consumer psychology. We proposed some potential factors which can result in this kind of systematic shift. Researchers can verify proposed factor to understand the underlying mechanism.

REFERENCES

- Bassili, John N. (1996), Meta-judgmental versus Operative Indexes of Psychological Attributes: The Case of Measures of Attitude Strength, *Journal of Personality and Social Psychology*, 71 (4), 637–53.
- Chien, Y., Wegener, D., Hsiao, C., and Petty, R., (2010), Dimensional Range Overlap and Context Effects in Consumer Judgments, *Journal of Consumer Research*, 37(3), 530-542
- Fazio, R. H., Powell, M.C., and Herr, P. M. (1983). Toward a process model of the attitude-behavior relation: Accessing one's attitude upon more observation of the attitude object. *Journal of Personality and Social Psychology*, 44, 723-735
- Herr, P. M., Sherman, S. J., and Fazio, R. H. (1983). On the consequences of priming: Assimilation and contrast effects. *Journal of Experimental Social Psychology*, 19, 232-340
- Herr, P. M. (1986). Consequences of priming: Judgment and behavior. *Journal of Personality and Social Psychology*, 51, 1106-1115.
- Herr, P. M. (1989). Priming price: Prior knowledge and context effects. *Journal of Consumer Research*, 16, 67-75
- Meyers-Levy, J., and Sternthal, B. (1993). A two-factor explanation of assimilation

and contrast effects. *Journal of Marketing Research*, 30, 359-368

Petty, Richard E., John T. Cacioppo and David Schumann (1983), "Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement," *Journal of Consumer Research*, 10(September), 2, 135-146.

Petty, Richard E. and Duane T. Wegener (1993), Flexible Correction Processes in Social Judgment: Correcting for Context-Induced Contrast, *Journal of Experimental Social Psychology*, 29(March), 137-165.

Hsiao, C. (2002). The Reciprocity Hypothesis As an Explanation of Perception Shifts in Product Judgment. Dissertation, Purdue University.

Yi, Y. (1990). The effects of contextual priming in print advertisements. *Journal of Consumer Research*, 17, 215-222

Yi, Y. (1993). Contextual priming effects in print advertisements: The moderating role of prior knowledge. *Journal of Advertising*, 22,

Appendix (I) Results of Pretest 1 & 2

Table 4.1.1 Caloric Content of Food: Mean, standard deviation (SD), and range in Pretest 1

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
饅頭	5.48	2.98	4.29	2.31	1.98	1.84	2.04	1.16
蘋果	3.96	2.12	2.92	1.85	1.62	1.53	1.54	0.85
海帶	3.54	1.52	2.37	2.02	1.41	1.09	1.14	0.78
水果	6.17	2.54	4.17	3.63	1.90	1.86	1.63	2.10
沙拉	5.90	2.38	4.04	3.52	1.86	1.46	1.52	1.57
現榨果汁	5.13	2.87	4.02	2.27	1.87	1.31	1.58	1.30
糙米	4.62	2.37	3.38	2.25	1.70	1.61	1.66	0.92
奇異果	4.29	2.23	3.15	2.06	1.78	1.57	1.63	0.86
水梨	5.23	2.81	3.96	2.23	2.06	1.74	1.89	1.06
花式咖啡	7.00	4.54	5.77	2.46	1.70	1.41	1.47	1.17
壽司	6.23	3.21	4.73	3.02	1.63	1.73	1.60	1.54
優格	5.67	3.33	4.52	2.35	2.15	1.90	2.09	1.10
啤酒	6.79	4.48	5.73	2.31	1.48	1.53	1.43	1.01
潛艇堡	7.10	4.35	5.83	2.75	1.59	1.68	1.53	1.37
粥	6.12	3.33	4.73	2.79	1.34	1.09	1.26	1.12
水餃	6.81	4.17	5.46	2.63	1.20	1.33	1.17	0.96
玉米	5.83	3.58	4.77	2.25	1.62	1.46	1.58	0.82
豆花	5.71	3.17	4.35	2.54	1.27	1.09	1.15	0.99
泰式料理	7.40	4.37	6.06	3.04	1.33	1.40	1.32	1.13
日式涼麵	6.33	3.35	4.79	2.98	1.61	1.46	1.51	1.13
關東煮	6.48	3.23	4.79	3.25	1.77	1.63	1.66	1.35
火鍋	8.77	5.58	7.50	3.19	1.04	1.60	1.01	1.50
蛋糕	9.18	6.04	7.86	3.14	0.88	1.34	0.98	1.33
冰淇淋	8.12	5.58	7.00	2.54	1.20	1.16	1.11	1.01
義大利麵	8.10	5.44	7.00	2.65	1.15	1.39	1.14	1.28
洋芋片	8.67	6.38	7.79	2.29	1.19	1.52	1.31	0.98
丼飯	7.77	5.19	6.58	2.58	1.04	1.34	0.97	1.03
巧克力	8.48	4.90	6.92	3.58	1.41	1.78	1.32	1.63
港式料理	7.94	4.87	6.56	3.08	1.10	1.63	1.26	1.27
鹹酥雞	8.96	6.60	7.98	2.27	0.84	1.41	1.23	0.91
牛排	8.76	6.20	7.70	2.46	0.96	1.46	1.07	1.08
焗烤燉飯	8.96	6.75	7.94	2.21	0.96	0.99	0.84	1.02

Table 4.1.2 Sweetness of Food: Mean, standard deviation (SD), and range in Pretest 1

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
火龍果	5.43	2.39	4.09	3.05	1.97	1.70	1.78	1.29
番茄	4.66	1.95	3.25	2.70	1.90	1.60	1.76	1.21
饅頭	4.52	1.55	3.27	2.98	1.74	1.36	1.42	1.29
沙拉醬	5.66	2.86	4.11	2.80	2.41	2.04	2.17	1.72
起司	4.18	1.41	2.55	2.77	1.74	1.33	1.65	1.41
堅果	4.18	1.41	2.55	2.77	1.74	1.33	1.65	1.41
白吐司	4.07	1.73	3.11	2.34	1.51	1.13	1.35	1.04
洋蔥	3.86	1.55	2.73	2.32	2.07	1.78	2.00	1.24
紅蘿蔔	3.82	1.48	2.75	2.34	1.94	1.71	1.78	0.99
白飯	3.73	1.75	2.73	1.98	1.91	1.44	1.69	0.91
小黃瓜	3.70	1.45	2.30	2.25	1.48	1.14	1.28	1.44
果凍	7.32	4.27	5.93	3.05	1.55	1.67	1.44	1.41
罐裝有糖茶	7.16	4.20	5.98	2.95	1.46	1.69	1.56	1.26
木瓜	7.02	4.02	5.75	3.00	1.46	1.92	1.72	1.20
甘蔗	7.30	4.86	6.25	2.43	1.65	1.83	1.69	1.07
櫻桃	6.61	3.82	5.24	2.80	1.66	2.12	2.04	1.32
柳丁	6.61	3.23	4.95	3.39	1.64	2.10	1.82	1.58
柚子	6.23	3.27	4.77	2.95	1.49	1.99	1.66	1.31
蛋糕	8.95	5.45	7.68	3.50	1.01	1.36	1.17	1.34
冰淇淋	8.91	4.91	7.32	4.00	0.88	1.99	1.05	2.01
巧克力冰淇淋	8.41	5.09	7.08	3.32	0.95	1.96	1.14	1.62
日式甜點	8.09	4.66	6.80	3.43	1.12	1.82	1.01	1.89
榛果巧克力	8.93	6.41	7.82	2.52	0.93	1.51	1.24	1.30
楓糖漿	8.61	6.41	7.69	2.20	1.59	1.94	1.70	0.92
甜甜圈	8.23	5.95	7.20	2.27	1.09	1.38	1.12	1.05
棉花糖	7.91	5.75	7.02	2.16	1.56	1.70	1.61	0.81
布丁	7.82	4.66	6.44	3.16	1.10	1.66	0.96	1.78

Table 4.1.3 Hardness of Object: Mean, standard deviation (SD), and range in Pretest 1

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
各種跑道	6.20	3.39	4.65	2.80	1.80	1.69	1.59	1.35
棉花	1.88	0.23	0.88	1.65	0.98	0.33	0.54	0.85
家用平板衛生								
紙	2.21	0.63	1.33	1.58	1.13	0.56	0.78	0.86
塑膠袋	2.77	0.79	1.65	1.98	1.53	0.62	0.93	1.16
填充布娃娃	3.29	1.08	2.02	2.21	1.23	0.73	0.90	0.79
印泥	3.31	1.27	2.15	2.04	1.45	0.94	1.13	1.01
床墊	5.02	1.98	3.25	3.04	1.67	1.09	1.23	1.50
枕頭	3.63	0.90	2.08	2.73	1.84	0.71	1.20	1.38
紙類	3.90	0.85	2.00	3.04	1.55	0.79	0.81	1.62
棉被	3.19	1.17	2.08	2.02	1.34	0.84	1.09	0.96
窗簾	3.37	1.39	2.22	1.98	1.10	0.92	0.99	0.75
免洗餐具	4.75	2.33	3.63	2.42	1.51	1.23	1.44	1.19
塑膠飲料罐	4.56	2.38	3.38	2.19	1.48	1.18	1.29	1.10
鞋子	5.63	2.52	4.04	3.10	1.73	0.93	1.33	1.38
鉛筆盒	6.50	2.00	4.08	4.50	1.67	1.34	1.36	1.93
樂扣保鮮盒	5.56	3.54	4.56	2.02	1.82	1.57	1.70	0.80
釘書機	6.58	4.73	5.63	1.85	1.26	1.51	1.38	0.81
馬桶蓋	6.76	4.85	5.87	1.91	1.28	1.61	1.32	0.90
毛巾架	6.71	4.48	5.63	2.23	1.46	1.48	1.32	0.91
木材	7.10	3.73	5.54	3.38	1.37	1.81	1.46	1.28
桌子	7.60	4.46	6.31	3.15	1.40	1.55	1.41	1.49
門	7.52	4.58	6.27	2.94	1.51	1.62	1.38	1.54
樂器	7.85	4.42	6.13	3.44	1.46	1.87	1.52	1.87
柵欄	7.02	4.35	5.79	2.67	1.39	1.65	1.48	1.03
櫃子	7.67	5.06	6.42	2.60	1.04	1.68	1.32	1.21
保齡球	7.73	5.96	6.96	1.77	1.20	1.48	1.30	1.09
花崗岩	8.60	6.73	7.83	1.88	1.24	1.18	1.19	0.80
水泥電線桿	8.42	6.69	7.60	1.73	1.16	1.10	1.09	0.72
健身房啞鈴	8.29	6.31	7.25	1.98	1.74	1.93	1.78	0.99
榔頭	8.60	6.60	7.77	2.00	0.88	1.27	0.92	0.96

Table 4.1.4 Expensiveness of Product Brand: Mean, standard deviation (SD), and range in Pretest 1

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
Hitachi 日立	6.56	4.13	5.38	2.44	1.31	1.29	1.26	0.78
家樂福自有品牌	3.75	1.69	2.63	2.06	1.18	1.15	1.07	1.05
雀巢	3.65	1.65	2.53	2.00	1.33	1.15	1.46	0.57
Maxwell	4.71	2.40	3.42	2.31	1.57	1.31	1.43	0.99
嬌生	4.67	2.23	3.48	2.44	1.86	1.51	1.86	0.98
Subway	4.54	2.54	3.52	2.00	1.95	1.69	1.78	0.77
麥當勞	4.54	2.27	3.48	2.27	2.08	1.76	2.02	0.91
Dunkin' Donuts	4.00	1.88	2.96	2.13	1.88	1.53	1.81	0.99
iTunes App	6.06	2.81	4.29	3.25	2.46	2.15	2.11	2.17
星巴克	5.98	3.81	5.00	2.17	2.21	1.90	2.09	0.90
Puma	5.85	3.25	4.48	2.60	1.44	1.34	1.47	0.77
BenQ 明基	5.81	3.23	4.54	2.58	1.26	1.18	1.09	1.03
Converse	5.63	3.50	4.63	2.13	1.77	1.75	1.78	0.81
JanSport	5.58	3.38	4.58	2.21	1.64	1.30	1.55	0.62
Meiji 明治	5.50	3.13	4.46	2.38	1.88	2.01	2.05	0.74
Lego 樂高積木	5.44	2.90	4.23	2.54	1.76	1.48	1.57	1.00
桂格	3.92	1.88	2.75	2.04	1.16	1.14	1.21	0.64
SONY	6.90	4.35	5.85	2.54	1.06	1.31	1.14	1.24
Honda	6.73	4.54	5.55	2.19	1.52	1.67	1.51	0.83
Nike	6.67	4.02	5.40	2.65	1.54	1.65	1.51	1.29
Acer	6.58	4.19	5.38	2.40	1.08	1.27	1.29	0.78
IKEA	6.33	3.77	5.15	2.56	1.49	1.39	1.43	0.76
Dell	6.15	3.59	4.89	2.57	1.32	1.21	1.21	0.99
HTC	7.15	4.96	6.17	2.19	1.62	1.74	1.61	1.28
CK	7.08	4.83	6.17	2.25	1.80	1.95	1.79	1.52
Canon 相機	7.46	4.44	6.15	3.02	1.42	1.95	1.36	1.97
Casio	6.56	5.42	5.08	1.15	1.54	8.02	1.48	7.37
Nokia	6.44	3.38	5.17	3.06	1.72	2.02	1.80	1.33
Uniqlo	6.17	3.35	4.94	2.81	1.70	1.77	1.75	1.29
Edwin	6.08	3.85	4.96	2.23	1.81	1.73	1.74	1.23
Apple	7.71	5.48	6.77	2.23	1.74	1.75	1.72	1.05
Rolux	8.98	6.73	8.00	2.25	1.07	1.53	1.44	0.81
Chanel 香奈兒	8.94	6.83	8.06	2.10	1.15	1.46	1.40	0.81
LV	8.60	6.81	7.77	1.79	1.52	1.73	1.55	0.81

O

BMW	8.77	6.69	7.84	2.08	0.90	1.05	0.89	0.79
Tiffany	8.63	6.40	7.58	2.23	1.16	1.55	1.33	0.88
Prada	8.50	6.17	7.75	2.33	1.00	1.39	1.07	0.97
Armani	8.42	6.17	7.56	2.25	1.16	1.64	1.28	0.93
Burberry	8.04	5.88	7.10	2.17	1.44	1.46	1.37	0.79

Table 4.1.5 Price of Product Brand: Mean, standard deviation (SD), and range in Pretest 1

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
印表機	6.35	3.76	4.93	2.59	1.23	1.00	0.96	1.09
橡皮擦	2.15	0.52	1.22	1.63	1.37	0.49	0.99	1.09
油性原子筆	2.87	0.74	1.74	2.13	1.86	0.60	1.08	1.77
便利貼	2.87	0.78	1.80	2.09	1.23	0.50	0.85	1.06
洋芋片	3.00	0.91	2.00	2.09	1.93	0.75	1.31	1.40
口香糖	3.00	0.85	1.74	2.15	1.78	0.87	1.06	1.43
利樂包飲料	3.02	1.11	1.96	1.91	1.74	1.20	1.34	1.17
洗髮精	5.57	2.87	4.04	2.70	2.02	1.56	1.38	1.64
咖啡	5.65	2.28	4.02	3.37	2.39	1.40	2.12	1.74
水果	5.22	1.46	2.98	3.76	2.32	1.16	1.48	2.03
冰淇淋	5.17	1.37	3.25	3.80	2.24	1.34	1.67	1.90
書	6.59	2.00	4.20	4.59	2.24	1.24	1.60	2.02
巧克力	6.04	0.96	3.39	5.09	1.89	0.60	1.68	1.89
主題樂園門票	6.76	3.74	5.30	3.02	1.73	1.51	1.44	1.33
DVD 播放器	6.48	3.59	4.78	2.89	1.40	1.56	1.37	1.53
球鞋	6.43	3.26	4.87	3.17	1.84	1.40	1.45	1.37
保健食品	6.83	3.76	5.26	3.07	1.70	1.52	1.74	1.20
大飯店自助式餐廳	7.52	4.33	6.11	3.20	1.50	1.64	1.48	1.40
烤麵包機	5.30	3.17	4.24	2.13	1.45	1.12	1.25	0.94
摩托車	7.72	4.52	5.96	3.20	1.27	1.20	1.16	1.50
全身按摩椅	7.70	5.54	6.74	2.15	1.41	1.43	1.11	1.65
金飾	8.96	6.26	7.70	2.70	1.27	1.97	1.55	1.51
筆記型電腦	8.04	5.11	6.57	2.93	1.12	1.36	1.24	1.09
國外旅遊團費	8.39	5.11	6.74	3.28	1.23	1.52	1.30	1.50
機票	8.39	4.61	6.54	3.78	1.22	2.02	1.53	1.88
鑽石飾品	9.15	6.80	8.13	2.35	1.51	2.26	1.95	1.50
汽車	9.09	5.30	7.00	3.78	0.97	1.81	1.35	1.69
限量手作名牌包	8.83	6.83	8.02	2.00	1.19	1.65	1.30	1.13
大鋼琴	8.50	5.59	7.04	2.91	1.17	1.59	1.19	1.40

Table 4.1.6 Luxury of Product Brand: Mean, standard deviation (SD), and range in Pretest 1

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
Dell 戴爾	6.15	4.09	5.13	2.07	1.78	1.56	1.63	1.06
麥當勞	3.37	1.20	2.22	2.17	1.54	0.93	1.17	1.13
家樂福自有品牌	3.76	1.67	2.78	2.09	1.59	0.95	1.22	1.30
雀巢	3.80	1.78	2.67	2.02	1.59	1.19	1.24	0.95
桂格	3.85	1.96	2.80	1.89	1.47	1.18	1.31	0.88
Dunkin' Donuts	3.87	2.13	3.07	1.74	1.77	1.38	1.59	0.86
嬌生	4.48	2.37	3.35	2.11	1.82	1.16	1.47	1.16
Subway	4.15	1.87	2.98	2.28	1.89	1.25	1.69	1.02
Puma	5.72	3.61	4.76	2.11	1.57	1.36	1.42	0.94
BenQ (明基)	5.61	3.30	4.48	2.30	1.85	1.81	1.79	0.99
Converse	5.35	3.28	4.35	2.07	1.60	1.46	1.58	0.88
JanSport	5.37	3.43	4.43	1.93	1.39	1.11	1.26	0.80
樂高積木	5.00	2.98	4.07	2.02	1.85	1.49	1.75	1.04
Nokia	5.39	3.15	4.22	2.24	1.71	1.45	1.62	1.16
Meiji 明治	5.41	3.37	4.39	2.04	1.81	1.25	1.60	1.16
Maxwell 麥斯威爾	4.28	2.50	3.41	1.78	1.96	1.71	1.74	0.84
Acer	5.76	3.48	4.67	2.28	1.65	1.51	1.63	0.86
HTC	6.80	4.63	5.74	2.17	1.51	1.69	1.79	0.78
Hitachi 日立	6.02	3.85	4.96	2.17	1.27	1.09	1.19	1.03
iTunes App	6.17	3.72	4.80	2.46	1.76	1.91	1.85	1.69
Starbucks	6.48	4.39	5.50	2.09	1.92	1.65	1.81	1.06
Edwin	6.17	4.11	5.17	2.07	1.79	1.46	1.58	0.88
Uniqlo	5.93	3.54	4.80	2.39	1.96	1.79	1.89	1.18
Nike	6.46	4.11	5.35	2.35	1.85	1.52	1.67	1.05
Canon 相機	7.39	4.63	6.09	2.76	1.42	1.48	1.47	1.51
Sony	7.07	4.11	5.78	2.96	1.34	1.30	1.15	1.36
IKEA 宜家家具	6.50	3.91	5.17	2.59	1.57	1.25	1.46	1.21
Honda	6.02	3.67	4.91	2.35	1.81	1.70	1.92	0.85
Casio 卡西歐	6.41	4.00	5.41	2.41	1.64	1.58	1.68	0.98
Calvin Klein	7.63	5.24	6.57	2.39	1.49	1.69	1.55	1.08
Burberry	8.57	6.50	7.63	2.07	0.88	1.36	1.02	0.90
Apple	8.11	5.74	7.15	2.37	1.22	1.28	1.23	0.86
Chanel 香奈兒	9.35	7.41	8.46	1.93	0.66	1.19	0.74	1.08

O

Armani	9.09	7.09	8.24	2.00	1.06	1.40	1.06	0.88
Rolex 勞力士	9.00	6.83	8.02	2.17	1.15	1.63	1.42	0.92
Prada	9.17	7.09	8.26	2.09	0.81	1.17	0.90	1.01
BMW	9.26	7.20	8.50	2.07	0.89	1.44	0.97	1.33
LV	9.02	6.96	8.15	2.07	0.92	1.51	1.16	0.90
Tiffany	8.85	6.76	8.02	2.09	1.12	1.68	1.28	1.20

Table 4.2.1 Caloric Content of Food: Mean, standard deviation (SD), and range in Pretest 2

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
饅頭	3.23	5.82	4.36	2.59	1.49	1.62	1.51	1.05
苜蓿芽	0.66	2.59	1.34	1.93	0.82	1.49	1.13	0.95
無糖綠茶	0.41	2.14	1.09	1.73	0.55	1.13	0.78	0.84
蒟蒻	0.98	3.27	2.07	2.30	0.92	1.59	1.29	1.21
海帶	0.73	2.93	1.73	2.20	0.77	1.51	1.03	1.20
無糖豆漿	1.52	3.80	2.50	2.27	1.14	1.32	1.25	0.88
黑咖啡	1.80	4.20	2.86	2.41	1.75	2.46	2.04	1.39
水梨	2.14	4.20	3.07	2.07	1.42	1.71	1.47	1.04
高纖蘇打餅乾	2.66	5.09	3.84	2.43	1.54	1.98	1.62	1.27
沙拉	1.55	5.20	3.32	3.66	1.90	2.06	1.89	1.67
水果	1.52	5.30	3.34	3.77	1.46	2.27	1.56	2.07
現榨果汁	1.82	4.77	3.25	2.95	1.09	1.56	1.22	1.38
義大利麵	4.61	7.50	6.16	2.89	1.65	1.75	1.71	1.39
啤酒	4.84	7.30	6.16	2.45	1.76	1.66	1.83	1.16
花生油	5.80	8.09	7.05	2.30	1.86	1.63	1.65	0.92
培根	5.93	8.27	7.32	2.34	1.26	1.18	1.16	1.06
奶油	6.45	8.70	7.73	2.25	1.75	1.49	1.43	1.53
沙拉油	5.30	8.02	6.75	2.73	1.70	1.83	1.70	1.22
丼飯	5.02	7.82	6.50	2.77	1.06	1.22	1.06	1.05
冰淇淋	5.02	8.50	7.25	3.48	2.24	1.57	1.66	2.03
蛋糕	5.91	8.41	7.45	2.50	1.99	1.31	1.41	2.03
火鍋	4.68	8.39	6.82	3.70	2.07	1.56	1.42	2.37
巧克力	4.93	8.30	7.05	3.36	2.19	1.57	1.58	2.09
港式料理	4.86	8.14	6.45	3.27	1.44	1.31	1.10	1.63
豬油	7.55	9.34	8.57	1.80	1.08	0.76	0.95	0.90
炸雞	7.55	9.52	8.82	1.98	1.26	0.59	0.85	1.03
油炸薯條	7.48	9.25	8.61	1.77	1.14	0.86	0.91	0.75

Table 4.2.2 Sweetness of Food: Mean, standard deviation (SD), and range in Pretest 2

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
抹茶拿鐵	5.93	3.65	4.75	2.28	1.70	1.17	1.45	1.41
小黃瓜	3.68	1.23	2.35	2.45	1.99	1.21	1.65	1.28
洋葱	3.65	1.00	2.28	2.65	2.27	1.14	1.86	1.51
紅蘿蔔	3.55	1.48	2.38	2.08	1.85	1.03	1.43	1.27
綠色花椰菜	3.10	1.05	1.93	2.05	1.99	1.31	1.76	1.16
薄荷葉	3.38	1.28	2.18	2.10	2.08	1.07	1.58	1.32
白飯	2.85	1.00	1.80	1.85	1.61	1.16	1.30	1.03
紫菜	2.15	0.50	1.05	1.65	1.33	0.92	1.09	0.96
白開水	1.40	0.20	0.63	1.20	0.79	0.50	0.56	0.59
口香糖	5.70	2.35	4.08	3.35	1.89	1.92	1.92	1.61
沙拉醬	5.68	2.63	4.38	3.05	2.31	1.89	1.94	1.65
柚子	5.55	2.50	4.33	3.05	1.95	1.42	1.63	1.78
芭樂	5.47	2.20	4.08	3.39	2.29	1.37	1.94	1.69
番茄	5.43	2.60	3.83	2.83	2.07	1.34	1.76	1.76
法式吐司	5.40	2.90	4.08	2.50	2.43	2.27	2.48	0.97
起司	3.93	1.38	2.45	2.55	2.52	1.26	1.77	1.80
饅頭	3.90	1.48	2.68	2.43	1.81	1.14	1.20	1.66
焦糖	7.68	5.00	6.53	2.68	1.58	1.75	1.54	1.26
蜂蜜綠茶	7.53	4.23	6.08	3.30	1.03	1.41	1.24	1.65
櫻桃	6.83	3.80	5.38	3.03	1.67	1.44	1.49	1.37
葡萄乾	6.80	3.98	5.53	2.83	1.53	1.84	1.74	1.20
柳丁	6.68	3.23	5.03	3.45	1.91	1.67	1.67	1.53
木瓜	6.45	3.38	5.03	3.08	1.15	1.11	1.12	1.28
火龍果	6.08	3.10	4.70	2.98	1.36	1.26	1.25	1.70
優格	6.25	2.75	4.63	3.50	1.32	1.38	1.31	1.72
車輪餅	5.95	3.23	4.63	2.73	1.43	1.51	1.24	1.37
蛋糕	8.88	4.85	7.13	4.03	1.05	2.16	1.49	1.82
冰淇淋	8.65	4.75	7.05	3.90	1.13	2.29	1.56	2.13
日式甜點	7.88	4.88	6.53	3.00	1.26	1.78	1.41	1.43
泡芙	8.18	5.33	6.98	2.85	1.42	1.56	1.28	1.48
蜂蜜	8.75	6.08	7.61	2.68	1.22	1.60	1.51	1.00
焦糖瑪琪朵	8.63	5.98	7.63	2.65	1.27	1.71	1.58	1.00
布丁	7.85	5.13	6.65	2.73	1.14	1.61	1.23	1.53
鬆餅	7.83	4.00	6.20	3.83	1.24	1.82	1.44	1.87

O

麥芽糖	9.08	6.78	8.15	2.30	1.09	1.38	1.27	1.32
糖霜	8.93	6.75	7.93	2.18	1.13	1.31	1.39	1.07
煉乳	8.48	6.30	7.55	2.18	1.85	2.02	2.19	0.92
冰糖	8.33	6.05	7.28	2.28	1.62	1.81	1.71	1.07
砂糖	7.95	5.98	7.10	1.98	1.65	1.75	1.74	1.04

Table 4.2.3 Hardness of Object: Mean, standard deviation (SD), and range in Pretest 2

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
各種跑道	8.45	7.12	7.90	1.33	0.96	1.08	1.01	0.62
塑膠袋	1.98	0.67	1.19	1.31	0.95	0.71	0.89	0.56
棉被	2.76	1.12	1.90	1.64	1.36	0.89	0.98	0.74
水泥電線桿	4.69	1.57	2.79	3.12	1.63	1.03	1.09	1.52
鞋子	5.57	2.55	3.81	3.02	2.01	1.44	1.47	1.69
免洗餐具	4.62	2.90	3.71	1.71	1.88	1.61	1.75	1.20
塑膠飲料罐	4.76	2.90	3.86	1.86	1.48	1.09	1.25	1.21
警用防彈盾牌	3.31	1.76	2.52	1.55	1.91	1.51	1.83	0.79
填充布娃娃	3.21	1.12	2.07	2.10	1.79	0.91	1.33	1.45
窗簾	3.17	1.14	2.07	2.02	1.46	1.00	1.14	1.13
釘書機	6.40	5.00	5.57	1.40	1.91	2.01	1.87	0.66
印泥	6.43	3.64	5.21	2.79	1.85	1.24	1.27	1.85
鉛筆盒	6.69	2.52	4.50	4.17	1.60	1.65	1.50	2.55
門	7.64	5.24	6.71	2.40	1.61	1.84	1.43	1.68
桌子	7.29	5.10	6.21	2.19	1.25	1.38	1.25	1.08
柵欄	7.60	5.45	6.64	2.14	1.22	1.14	1.23	0.79
櫃子	7.52	5.40	6.62	2.12	1.16	1.41	1.13	1.23
樂器	7.40	4.29	6.00	3.12	1.18	2.01	1.13	2.05
健身房啞鈴	8.43	7.21	7.88	1.21	1.26	1.49	1.31	0.51
花崗岩	8.60	7.23	8.00	1.31	0.75	1.08	0.97	0.64
榔頭	8.71	7.43	8.17	1.29	1.01	1.15	1.04	0.56
床墊	8.76	7.57	8.14	1.19	0.98	1.14	1.10	0.49
鑽石	9.98	9.02	9.71	0.95	0.11	0.75	0.34	0.76
防彈玻璃	9.11	7.79	8.60	1.31	0.88	1.31	1.17	0.87
坦克車	9.31	7.95	8.79	1.36	0.73	0.96	0.78	0.45

Table 4.2.4 Expensiveness of Product Brand: Mean, standard deviation (SD), and range in Pretest 2

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
Hitachi 日立	6.48	4.13	5.35	2.35	1.48	1.28	1.32	1.03
百元理髮	2.93	1.10	1.93	1.83	1.42	0.74	1.13	1.07
10 元商店	2.38	0.43	1.23	1.95	1.65	0.47	0.92	1.61
10 元麵包	2.03	0.55	1.08	1.48	1.15	0.54	0.77	0.92
鮮天下鍋貼水餃專賣	4.38	2.18	3.08	2.20	2.28	1.44	1.88	1.31
家樂福自有品牌	3.95	1.68	2.63	2.28	1.74	0.77	1.24	1.33
50 元便當	3.93	1.95	2.75	1.98	1.97	1.22	1.50	1.08
大創	3.80	1.50	2.45	2.30	1.95	1.65	1.61	1.29
八方雲集	3.63	2.05	2.78	1.58	2.10	1.55	1.87	0.95
BenQ (明基)	6.18	3.40	4.70	2.78	1.67	0.98	1.11	1.39
Godiva 巧克力	6.03	3.63	5.00	2.40	1.77	1.43	1.68	1.03
Puma	5.85	3.60	4.73	2.25	1.83	1.48	1.63	1.21
iTunes App	5.58	3.18	4.18	2.40	2.09	1.91	1.94	1.10
Lego 樂高	5.50	2.95	4.18	2.55	2.27	1.34	1.91	1.27
Meiji 明治	5.37	3.34	4.21	1.93	1.81	1.61	1.60	1.36
嬌生	5.30	2.85	4.05	2.45	2.20	1.09	1.72	1.61
Canon 相機	7.40	4.18	5.90	3.23	1.64	1.45	1.34	1.77
Hankyu 統一阪急百貨	7.33	4.15	5.88	3.18	1.90	1.60	1.61	1.64
星巴克	6.28	4.23	5.48	2.05	2.11	1.65	1.98	0.99
Acer	6.23	3.75	4.90	2.48	1.53	1.01	1.05	1.31
太平洋 SOGO 百貨	7.78	4.33	6.10	3.45	1.66	1.53	1.32	1.95
Bellavita 百貨公司	7.69	4.94	6.44	2.48	1.41	1.55	1.39	1.49
Blackberry 黑莓機	6.83	4.70	5.78	2.13	1.60	1.46	1.53	0.86
香奈兒	8.48	6.28	7.58	2.20	1.20	1.28	1.08	1.26
LV	8.30	6.10	7.35	2.20	1.81	1.63	1.66	1.09
Tiffany	8.18	5.95	7.03	2.23	1.57	1.83	1.64	1.08
晶華酒店	8.05	5.95	7.03	2.10	1.12	1.20	1.09	0.77
Burberry	7.92	5.68	6.95	2.13	1.64	1.82	1.72	1.12
Rolex	8.16	6.29	7.24	1.78	1.54	1.48	1.36	0.95
君悅大飯店	7.53	5.60	6.50	1.93	1.24	1.22	1.18	0.85
寒舍艾美酒店	7.47	5.08	6.31	2.15	1.41	1.44	1.46	1.26
Apple	7.28	5.03	6.23	2.25	1.80	1.59	1.63	1.25

O

Ferrari 法拉利	9.43	7.38	8.65	2.05	0.86	1.02	0.84	0.89
Porsche 保時捷	9.33	7.55	8.58	1.78	0.98	1.07	0.99	0.82
BMW	8.65	6.65	7.78	2.00	1.41	1.53	1.37	1.09

Table 4.2.5 Price of Product Brand: Mean, standard deviation (SD), and range in Pretest 2

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
印表機	5.36	3.21	4.26	2.14	1.64	1.22	1.28	1.33
口香糖	2.02	0.67	1.14	1.36	1.07	0.46	0.62	0.73
油性原子筆	2.00	0.60	1.31	1.40	0.89	0.52	0.73	0.74
橡皮擦	1.76	0.50	1.10	1.26	1.19	0.42	0.89	1.03
便利貼	2.05	0.86	1.36	1.19	1.32	0.96	1.18	0.62
洋芋片	2.52	1.05	1.69	1.48	1.27	0.79	1.11	0.78
利樂包飲料	2.33	0.98	1.57	1.36	1.10	0.49	0.76	0.84
咖啡	4.55	1.74	3.00	2.81	2.01	0.87	1.21	1.83
水果	4.21	1.19	2.40	3.02	2.42	0.99	1.48	2.15
巧克力	4.64	1.31	2.90	3.33	2.31	0.81	1.60	2.47
冰淇淋	4.00	1.17	2.69	2.83	2.29	0.87	1.69	2.37
書	5.26	1.62	3.26	3.64	2.32	0.79	1.21	2.42
摩托車	6.50	3.60	4.93	2.90	1.69	1.15	1.12	1.91
汽車	8.79	5.38	7.26	3.40	1.07	1.76	0.78	2.31
國外旅遊團費	7.74	4.55	6.19	3.19	1.43	1.25	1.07	1.89
筆記型電腦	7.14	4.21	5.74	2.93	1.85	1.56	1.35	1.93
機票	7.21	4.07	5.67	3.14	1.58	1.39	1.32	1.83
大鋼琴	7.64	5.38	6.64	2.26	1.29	1.36	1.20	1.31
古典名畫	9.12	6.67	8.12	2.45	0.77	1.81	0.92	1.45
環遊世界之旅	9.31	6.69	8.14	2.62	1.08	2.09	1.36	2.08
私人飛機	9.69	8.14	9.02	1.55	0.43	1.05	0.91	0.85
豪華私人遊艇	9.14	7.31	8.40	1.83	0.87	1.16	0.78	1.03
豪宅	9.71	7.60	8.88	2.12	0.44	1.55	0.79	1.52

Table 4.2.6 Luxury of Product Brand: Mean, standard deviation (SD), and range in Pretest 2

	High Mean	Low Mean	Point Mean	Range Mean	High SD	Low SD	Point SD	Range SD
家樂福自有品牌	3.76	1.67	2.78	2.09	1.59	0.95	1.22	1.30
Meiji 明治	5.41	3.37	4.39	2.04	1.81	1.25	1.60	1.16
樂高積木	5.00	2.98	4.07	2.02	1.85	1.49	1.75	1.04
Converse	5.35	3.28	4.35	2.07	1.60	1.46	1.58	0.88
嬌生	4.48	2.37	3.35	2.11	1.82	1.16	1.47	1.16
Hitachi 日立	6.02	3.85	4.96	2.17	1.27	1.09	1.19	1.03
Calvin Klein	7.63	5.24	6.57	2.39	1.49	1.69	1.55	1.08
Sony	7.07	4.11	5.78	2.96	1.34	1.30	1.15	1.36
Canon 相機	7.39	4.63	6.09	2.76	1.42	1.48	1.47	1.51
Apple	7.28	5.03	6.23	2.25	1.80	1.59	1.63	1.25
晶華酒店	7.93	5.52	6.75	2.41	1.51	1.69	1.53	1.06
Armani	9.09	7.09	8.24	2.00	1.06	1.40	1.06	0.88
Rolex 勞力士	9.00	6.83	8.02	2.17	1.15	1.63	1.42	0.92
Prada	9.17	7.09	8.26	2.09	0.81	1.17	0.90	1.01
BMW	9.26	7.20	8.50	2.07	0.89	1.44	0.97	1.33
LV	9.02	6.96	8.15	2.07	0.92	1.51	1.16	0.90