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碩士論文

Graduate Institute of Global Business and Strategy

College of Management

National Taiwan Normal University

Master Thesis

雙重背景下之脈絡效果：正負促發物對產品判斷的影響

Context Effect under Dual Contexts:

The Influence of Positive and Negative Primes to Product Judgment

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中華民國 103 年 7 月

July, 2014

摘要

很多理論與實證模型都專注於研究促發效果的影响力，以及其所扮演的角色。

Chien et al. 在 2010 年提出的「解釋範圍重疊模型」(The Dimensional Range Overlap Model, DROM), 更進一步提出理論假設, 促發物與目標物兩者之間是否重疊, 會決定促發物與目標物兩者是產生同化效果 (Assimilation Effects) 還是對比效果 (Contrast Effects)。本研究在 DROM 模型單一促發物的架構下, 使用兩個促發物來檢視促發效果, 並納入 Hsiao 的「相互假設」(Reciprocity Hypothesis) (2002), 觀察兩個促發物之間重疊與否是否會彼此影響, 是否會產生促發物之間的同化效果或對比效果。本研究四個實驗中的第一階段, 分別先讓兩個促發物不重疊、目標物各別與負和正的促發物有著不同程度的重疊、最後再整合讓目標物與兩個促發物同時重疊。第二階段衡量了兩個促發物之間的促發效果, 以及促發物各自與目標物之間的促發效果。本研究只有第二個實驗結果顯著, 發現負的促發物與目標物出現顯著的同化效果。儘管其他三個實驗的結果並不顯著, 但是其實驗結果大致上反映了與我們預計相同的移動方向, 支持其假設, 只是並未通過統計檢定。

關鍵字：促發效果、同化效果、對比效果、解釋範圍重疊模型、相互假設、多種促發物、對等

ABSTRACT

Many theories and models have been developed to focus on the role and influence of contextual effects. The Dimensional Range Overlap Model (Chien et al., 2010) went further to suggest that it was the dimensional overlap in the range of values that contextual and target stimuli might take that determines the effect of assimilation or contrast between them. We employed the use of two primes in this study to examine contextual effects of consumer judgment in the case of more than one prime, maintaining the crux of the DROM model, where the existence of an overlap or non-overlap, would determine assimilation or contrast effect movements of perceived consumer judgment respectively. We also incorporated Hsiao's Reciprocity Hypothesis (2002), where an overlap or lack thereof between two primes would result in a mutual effect and cause both primes to simultaneously shift towards or away from each other respectively. In Stage 1 of our four experiments, we manipulated a non-overlap between two primes, as well as overlaps of different ranges between a negative and positive prime with the target separately, before finally presenting both primes and the target together in the final experiment. Stage 2 of the experiments measured for the respective contextual effects between the prime(s) and/or with the target. Only the second experiment was confirmed; where the negative prime and target showed significant, simultaneously assimilated shifts. While the results did not support the other hypotheses we proposed, we did note that the overall shift tendencies were according to our general assumptions, though unfortunately, they could not be proven statistically.

Keywords: Priming Effects, Assimilation Effect, Contrast Effect, Product Judgment, Dimensional Range Overlap Model, Reciprocity Hypothesis, Multiple Primes.

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ACKNOWLEDGMENTS

First and foremost, I would like to send my utmost gratitude to my advisor, Professor Chung-Chiang Hsiao. Without his assistance and dedicated involvement in every step throughout the process, this paper would have never been accomplished. I thank him for honing my understanding in consumer psychology, and for his invaluable advice in other school matters that made my stay in Taiwan a smooth sailing one.

I would also like extend my sincerest gratitude to Professor Yi-wen Chien for her guidance, for sharing invaluable insights, as well as her sound advice in the development of my research. Her positive attitude and enthusiasm of the topic made a strong impression on me, and never failed to keep me passionate on my research topic.

I would like to thank my research partners, Sophie Wu, Cabi Kao, Wendy Liu and Austin Su, for all the enriching and cheery weekly meetings we had. My deepest appreciation especially to Sophie and Cabi, with whom I not only have meaningful discussions, but also heart-to-heart chats; who unfailingly provided advice and assistance to me whenever I needed.

I further extend my gratitude to a special friend, with whom I met on a peculiar circumstance but developed a close relationship with. I earnestly thank Eden Lo, whose relentless help I am dependent on, whether it was for the writing of the our research questionnaire programme, or the running and interpretation of my research results.

Most importantly, none of this could have happened without my family. I am forever grateful to my parents, my sisters, Emilyn Loi and Esther Lu and best friend, Suwan Yap, for their unconditional love and encouragement that inspired me to take the leap; their support and concern was the greatest motivation that ushered me through my studies to the end.

Finally, my special thanks to the good friends I have made, Chaohui Liu, Xianghe Gao, Adam Stankiewicz, Hugo Winckler, Eesa Chung, Barbara Bianchi, Yen-chen Liu, Yen-Jan Chang, Ting-yi Hsu, for making my time in Taiwan a highly productive and rewarding one.

CHAPTER 1 MOTIVATION AND STUDY PURPOSE

Consumers encounter a wide array of products in their daily lives, where a large amount of evaluations and judgments would be made. These product evaluations may come from product advertisements (Yi, 1990) or endorsers (Petty, Cacioppo, and Shumann, 1983), attempting to influence consumers' judgments by way of irrelevant biases. Much as consumers believe their judgments are rational and impartial, most of their decisions are in fact, influenced by the many contexts they come in contact with. This process of priming occurs constantly and results in an influenced decision, with or without the consumer's awareness; the presence of consciousness simply determines the type of priming effect to be obtained (Tulving, 1985; Lombardi, Higgins and Bargh, 1987).

The priming paradigm (Higgins, Rholes, and Jones, 1977; Srull and Wyer, 1979) proposes that *unobtrusive* exposure to exemplars of a cognitive category makes certain information in that category more accessible, resulting in two judgemental effects, namely, the assimilation and contrast effect, and consequently influences the consumer's purchasing behaviour. Where contrast occurs when the context sets up a relatively extreme standard of comparison with the target (Herr, 1986), assimilation arises when the context activates concepts (information and concept matches each other; Martin, 1986) that are used to interpret the qualities of the target (Yi, 1993). Aside from category accessibility, extensive research has also since been done to explain the determinants of such assimilation or contrast effect on consumers' choice evaluations. Prior knowledge (Herr, 1989), consumer expertise (Herr, 1989) and information presentation of visual versus verbal (Meyers-Levy, 1989) are other examples of determinants of judgement effects.

The Dimensional Range Overlap Model (DROM) by Chien, Wegener, Hsiao and Petty (2010) provided a different perspective on the occurrences of assimilation and contrasts

effects. It suggests that the direction of priming effect, whether to assimilate or contrast, would be determined fundamentally by the contexts and targets, though not entirely per se. The DROM proposes that “many qualities of contexts and targets that influence context effects do so because, at their core, they represent the ‘dimensional range overlap’ that they create between the context and the target”, and therefore whether there is substantial overlap between the context and target ranges, as well as the distance between both context and target’s representative values, would determine whether an assimilation or contrast effect would arise. The model shows that when there is substantial overlap between the context and target ranges, assimilation occurs, while a lack of overlap would produce contrast effects, no matter which type of context or target is used, regardless of specific variables such as context extremity (Herr, Sherman, and Fazio, 1983) and target ambiguity (Herr et al., 1983).

While all prior studies focus on how single context affect people’s target judgment, devotion to studies on the effects of multiple contexts on target evaluation have been minimal. We, however, consider that consumers realistically receive information on multiple competing products most of the time, and thus regard the study on effects of multiple contexts one worth investigating.

The current research will develop and build upon the theory foundation of the Dimensional Range Overlap Model (Chien et al., 2010). Where the model assumes and uses only one prime, this research shall realistically utilise more than one prime, one positive and one negative of the target, to create an overlap or non-overlap, and in turn highlight the effect of the combined primes in relation to the target range. In accordance with the Dimensional Range Overlap Model, the essence of the model shall lie in the presence or absence of overlap between the interpretation range of the target and primes, regardless of the type of target and primes used.

We will also examine the simultaneous shift of the prime perception in accordance to the shift in the target perception (Hsiao, 2002), in a multiple contexts setting. As proposed by the Reciprocity Hypothesis in Hsiao's (2002) study, the judgment of the target is affected by a prior prime the same time the judgment of the primes are expected to be affected by the target stimulus, thereby resulting in simultaneous shifts. The present research shall also place attention on the mutual effects of the primes, broadening the scope of the Dimensional Range Overlap Model.

Last but not least, we will be introducing a new way of carrying out our study, conducted by way of a pretest and one main experiment. While the pretest will be in the form of short written questionnaires, more intrinsically-designed questions for the main study with four different experimental conditions detailed hereinafter would be written on a Visual Basic Application (VBA) programme to be done on computers, for ease of conducting and accuracy of conditions to be manipulated. The main experiment for all four experimental conditions shall consist of Stage 1 pre-context effects situation and Stage 2 post-context effect comparisons. Results collected would be on separate Excel sheets, to be analysed and presented in later sections.

CHAPTER 2 LITERATURE REVIEW

An Introduction to Contextual Priming Effect

The term “priming” was first invented by Segal and Cofer (1960) to refer to the effect of using a particular concept in one task on the probability that the same context would be used in a subsequent, unrelated context. It essentially refers to the processing of information with awareness or intent.

The priming methodology was, however, acquainted to experimental social psychology by Higgins, Rholes, and Jones (1977), in a set of studies that involved priming personality concepts and tracking effects on subsequent impression formation, and in which also remains representative of the basic priming paradigm used today.

Oblivious to the priming effects they have been exposed to, consumers hardly make impartial and unbiased judgments in their daily product evaluations and purchases. When primed, accessibility of some category or construct is increased in the consumer’s memory (Sherman, Mackie, and Driscoll, 1990), consequently causing him to utilise this relationship in his product judgment. The priming effect typically portrays unintended influence of recent or recurrent experiences on subsequent thoughts, feelings, and behaviour (Bargh and Chartrand, 2000). Therefore, when a related attribute is primed by the category context, a positive or negative relationship associated with this attribute is activated in the consumer’s mind, and this relationship may be utilised in his consideration of the product.

Assimilation Effect versus Contrast Effect

There are two types of contextual effects – assimilation and contrast effect. Assimilation effects are demonstrated when the introduction of an anchor (the primed category) leads to the displacement of the judgment of objects toward the anchor (Helson, 1964; Sherif & Hovland, 1961). On the other hand, contrast effect is noted to be the judgment

of a given target stimulus that is inversely related to the values of the context stimuli that accompany it. For example, in a study conducted by Sherman et al. (1978), participants were reported to judge recycling to be much less important in the context of the more important issues than in the context of trivial issues. Simply, contrast effect refers to a target judgment shift away from the context, as opposed to a target judgment shift toward the context, in the case of an assimilation effect.

Empirical Theories of Assimilation and Contrast Effect

Past theories and models on priming effects have been developed extensively to show that judgments are sensitive to the context in which they are made (Herr, 1989; Meyers-Levy, 1989). Of which, demonstrations attempting to define underlying conditions for assimilation and contrast effects have also been aplenty. In one such experiment done by Herr (1989), prior knowledge of the participant was found to be a condition affecting both categorisation and judgments effects. His first experiment found that assimilation occurs only in the condition where the primed category is moderate (price of real cars) and the target to be judged is ambiguous (hypothetical cars). All other conditions were found to produce contrast effects. Herr then conducted a second experiment using both real and hypothetical cars as target stimuli, to examine the impact of pre-existing knowledge differences on priming effects. Results showed that priming effects are present only when participants have high knowledge; participants with lack of knowledge would not be affected by priming effects, thus strongly indicating that priming effects are in fact a function of the level of pre-existing knowledge held by the individual (Herr, 1989).

In a similar study, Higgins et al. (1977) found that ambiguous stimuli are more likely to be captured by the primed category. Participants in the study were asked to do a seemingly unrelated experiment after being discreetly primed to either positive or negative trait

adjectives that can equally describe an ambiguous target person's behaviour. It was revealed that participants who had been exposed to the positive traits had a significantly more favourable impression of the target person than other participants who had been exposed to the negative traits.

Herr, Sherman and Fazio (1983) also suggested that the ambiguity of the target as well as extremity of the primed category would dictate which direction priming would take place. The study first primed participants with well-known animals of ambiguous ferocity, before asking them to evaluate animals known to be moderately ferocious, including two fictitious animals invented to serve as ambiguous stimuli ("jabo" and "lemphor"). Contrast effect was evident in the extreme and ambiguous category (e.g. "extremely high" or "extremely low"), while assimilation effect was shown in judgments where moderate categories are primed and ambiguous stimuli are judged.

In another example, Meyers-Levy and Sternthal (1993) attempted a two-factor theory to explain the effects of assimilation and contrast. The theory successfully proved that when substantial cognitive resources are devoted to message processing and that the categories of the context has a slight overlap with the target, contrast would occur, while the absence of either one of these factors would prompt assimilation.

The Dimensional Range Overlap Model

While previous theories and models for judgment targets, like the social judgment theory (Sherif and Hovland, 1961) which described latitudes of acceptance and rejection, have suggested a possible range and overlap in contextual priming effects, the Dimensional Range Overlap Model (DROM) is the first context effect model that directly addresses the concept of a possible dimensional range and overlap (Chien et al., 2010).

The Dimensional Range Overlap Model suggests that contextual effects, whether assimilation or contrast, is determined by the “perceptions of amount of overlap between the target range and context range”, thereby giving a measurable range to both the context and target, and going on to establish context effects by way of a presence, or lack of, of overlap between plausible values of both the context and target. Plausible value is defined as the range of possible interpretations for a context or target.

According to the model tested over three experiments, the three factors that determine the amount of substantial overlap are: the width of the context range, the width of the target, as well as the distance between the context and the target. Where there is a substantial overlap between the context and the target, assimilation is expected to occur, while contrast is expected in the absence of the said substantial overlap.

In Experiment 1 where an advertisement for a new car was used, the target range was manipulated to be sufficiently wide enough to overlap with the context range, or sufficiently narrow so as not to overlap with the context range, *ceteris paribus*. The results showed that where a substantial overlap was present between the ranges, assimilation was produced, and an absence of an overlap would create contrast, supporting the hypothesis.

In the subsequent Experiment 2 testing the same two hypotheses as Experiment 1, the relative distance between the representative values were in turn varied, holding the ranges of

both the context and target constant. Participants were first asked to note adjectives that they associated with products of a certain prestige range, followed by rating a moderately prestigious brand of car, the Honda Civic. Finally, they were asked to report the prestige range of a product described by each of the adjectives that they had listed in the first part. Again, the results showed consistency as before, further validating the hypotheses that assimilation would arise as expected when an overlap is developed, and where a non-overlap was created due to a distance between ranges, contrast would follow.

In the final Experiment 3 similar to that of Experiment 2, effects of range overlap created by a manipulation in the width of the context range, everything other variable constant, were examined. Positive results were produced, showing that an overlap created by a wide enough context range would warrant assimilation, while a non-overlap caused by a narrow enough context would generate contrast. The Dimensional Range Overlap Model was once again supported.

In essence, the core of the Dimensional Range Overlap Model lies in whether the context and target range overlaps substantially by way of the three variables abovementioned, to produce either assimilation or contrast effect. The model was substantiated steadily over three experiments, indicating that contextual effects are in fact dependent on the “dimensional range overlap”.

Illustrated in Figure 2.1 is a presentation of assimilation effect produced, as proposed in the Dimensional Range Overlap Model.

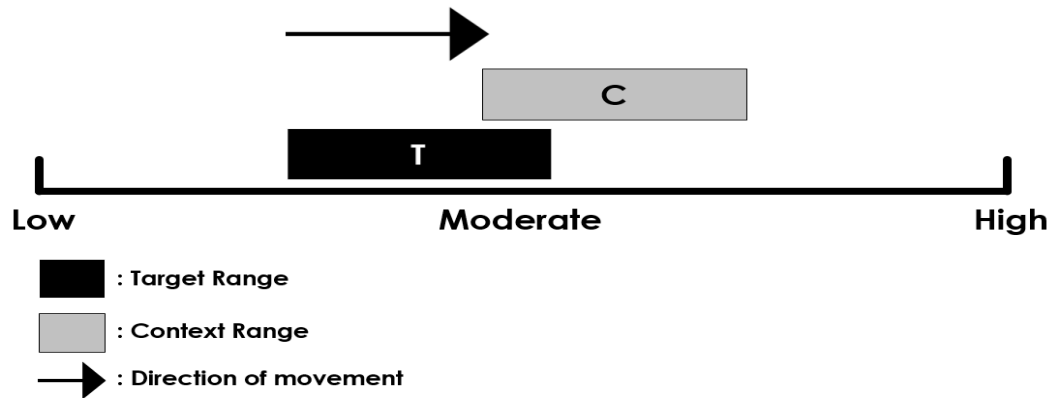


Figure 2.1 Assimilation Effect: (1) Narrow context range; (2) wide target range; (3) narrow relative distance between both context and target's representative values.

Similarly, the Dimensional Range Overlap Model justified that contrast effect will be produced in the following situation depicted in Figure 2.2.

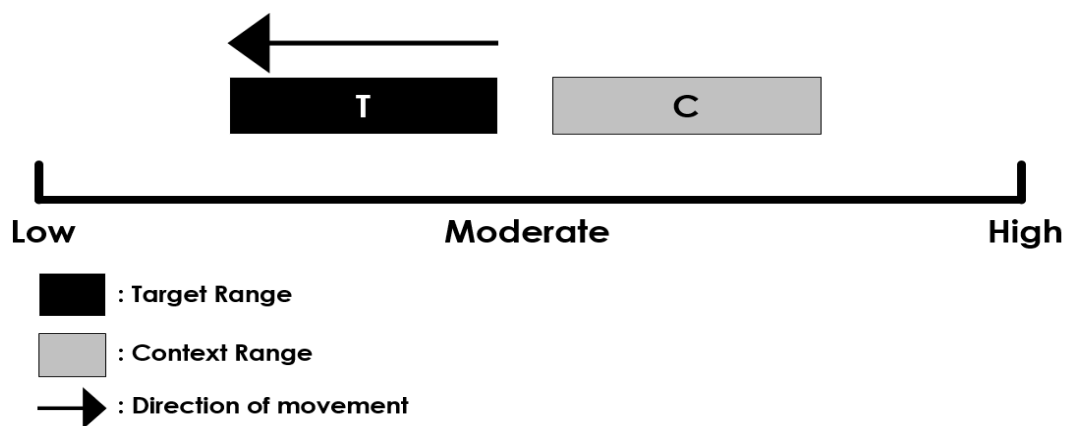


Figure 2.2 Contrast Effect: (1) Narrow context range; (2) wide relative distance between both context and target's representative values; (3) narrow target range.

Reciprocity Hypothesis

As opposed to the many priming studies focusing primarily on shifts in perception of target before, Hsiao (2002) proposed a reciprocal shift in the contextual stimuli, either in a direction towards or away from the target, in addition to a shift in the target towards or away from the contextual stimuli in assimilation and contrast situations respectively. Simply, it means to say when a context prompts assimilation, the perception of the target may shift towards the context, but the perception of the contextual stimulus itself will also move towards the target (Figure 2.3). The same applies for contrast effects, as depicted in Figure

2.4.

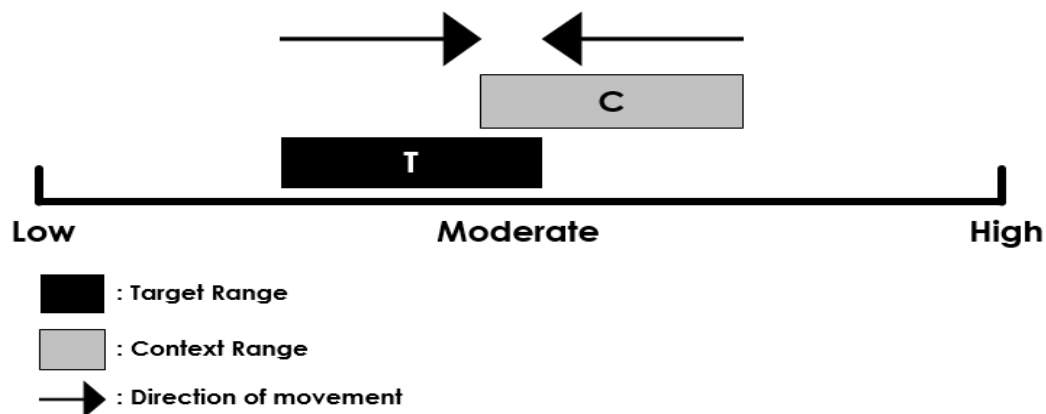


Figure 2.3 Assimilation Effect: The perception of the context shift toward the target will occur simultaneously with the perception of the target shift toward the contextual stimulus.

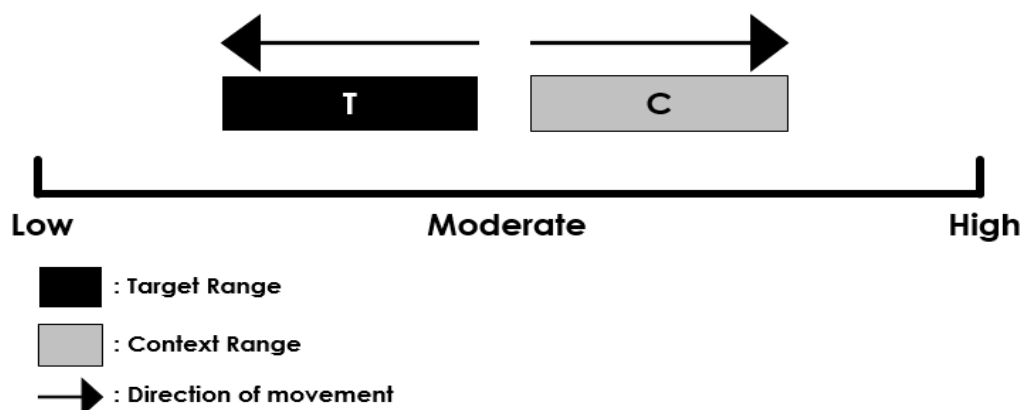


Figure 2.4 Contrast Effect: The perception of the context shift away from the target will occur simultaneously with the perception of the target shift away from the contextual stimulus.

Three groups of participants were involved in Study 1 of the Hsiao's (2002) experiment to test for contrast effect (illustrated in Figure 2.4 above). The first group was told to evaluate only the target (low-humour stimulus, *Schindler's List*), while another was instructed to evaluate only the contextual stimulus (high-humour stimulus, *The Simpsons*). The final group was tasked to evaluate both – first the contextual stimulus, then the target. The results showed that the perceptions of the target and contextual stimulus shifted away from each other simultaneously, thus supporting the Reciprocity Hypothesis.

In an identical Study 2 tested for assimilation effect held subsequently, both the context and target stimuli were selected to be moderately humorous, Jurassic Park and Lion King respectively. Similarly, one group of participants was tasked to evaluate only the target stimulus, another group to evaluate only the contextual stimulus, and a third group to evaluate both – first the context, then the target. The results showed that the perceptions of the target and contextual stimuli shifted toward each other simultaneously this time, supporting the Reciprocity Hypothesis again.

The Reciprocity Hypothesis clearly demonstrated the concept of a simultaneous shift in the contextual stimuli as the target stimuli over two experiments, proving that judgments of context would indeed be affected by target judgments the same way target judgments affect contextual judgments. It is also a development of past research which had primarily been focused on shifts in target perceptions.

Extensions of the DROM and Reciprocity Hypothesis

Following the establishment of Chien et al.'s DROM, several theories were formed in attempts to extend the model. Of which, Lu (2012) incorporated Hsiao's Reciprocity Hypothesis and attempted to examine contextual effects under multiple contexts. The new factor of attitude certainty, expected to dictate the magnitude of evaluation shift, was introduced though failed to be proven.

Tse (2012) also examined the influence of dual primes, one positive and negative prime each on product judgment, making a similar proposition that a higher attitude certainty will result in lower magnitude of shift, while lower attitude certainty would result in higher magnitudes of shift. She too, however, did not manage to confirm her hypotheses. In addition, Tse's (2012) suggestion of a possible sequence effect in the presentation of primes was not proven to have an impact on product judgment as well.

In another earlier DROM extension experiment, Lin (2006) utilised both exemplar and attribute information primes, to test for contextual effects under multiple primes. Over two experiments, Lin successfully showed that when exemplar primes are accompanied by the attributes they represent, both assimilation and contrast would occur depending on the existence of overlap or non-overlap of the combined primes. It was also proven that the occurrence of assimilation or contrast was not limited by the type of primes (exemplar or attribute), and it was the final range of overlap or lack thereof, after sequence effect took place, that mattered. Further, Lin also showed that priming effects on the main judgment dimension were more influenced by dimensions of more relevance to the main judgement dimension.

CHAPTER 3 THEORETICAL BACKGROUND AND HYPOTHESES

Theoretical Background

The question of which post-priming situation is likely to lead to assimilation or contrast remains a largely researched and significantly important part of consumer psychology. Faced with considerably great amounts of information daily, consumers typically process these information without awareness or intent, thus rarely making impartial or uninfluenced product evaluations. Despite the multiple theories and models raised before attempting to explain priming effects, including but not limited to prior knowledge (Herr, 1989; Yi, 1993), accessibility of concepts in relation to the activated one (Higgins and King, 1981; Wyer and Srull, 1981) regardless of whether people are aware of the activated concepts (Higgins, Bargh and Lombardi, 1985), the Dimensional Range Overlap Model however, has proven that the sole determining factor target judgment would be the amount of overlap between the prime and the target, irrespective of the context and targets used (e.g. ambiguous targets).

Hypothesis

The Effects of Mixed Primes

As mentioned, the current research will be conducted with a mixed prime condition, namely one prime each on the positive and negative of the target. Where the Dimensional Range Overlap Model (Chien et al., 2010) established that assimilation would occur in the presence of a substantial overlap and contrast would happen when there is a lack of overlap, we are interested to find out how the target and primes will move in the event where both primes simultaneously overlap with the target, each on the positive and negative valence of the target, but have a non-overlap between them. Applying the theory established by the Dimensional Range Overlap Model into the mixed prime condition, an overlap between either primes with

the target would be expected to cause a mutual effect between both primes with the target to move toward one another concurrently, though the lack of overlap between the two primes would suggest otherwise, causing both primes to contrast away from each other simultaneously and thereby generating new range values for each prime.

Hypotheses 1 and 2 are thus generated as follow:

Hypothesis 1: *When prime 1 and 2 have different valences and there is no overlap between the two primes initially, then prime 1 and prime 2 will contrast away from each other.*

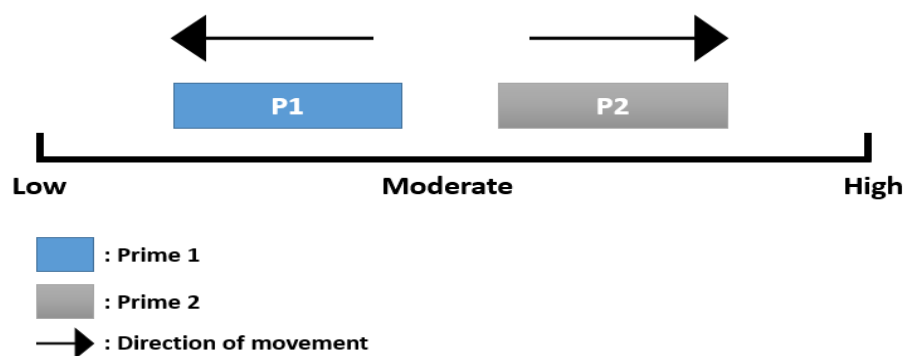


Figure 3.1 Hypothesis 1

Hypothesis 2A: *For the condition in which the prime on the negative valence of the target is wide enough to create an overlap with the target initially, then both the prime and target will assimilate towards each other.*

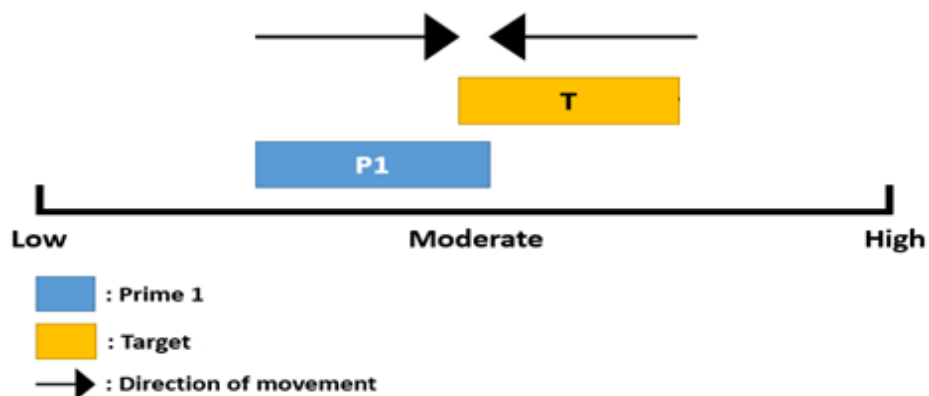


Figure 3.2 Hypothesis 2A

Hypothesis 2B: For the condition in which the prime on the positive valence of the target is wide enough to create an overlap with the target initially, then both the prime and target will assimilate towards each other.

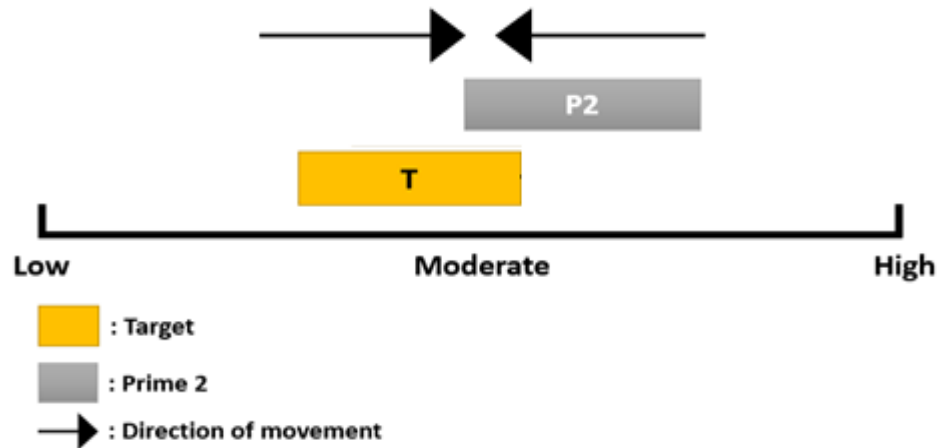


Figure 3.3 Hypothesis 2B

Hypothesis 3: For the condition in which the two primes have different valences and each overlap with the target initially, but the positive prime overlaps with the target at a larger amount than the negative prime, and both primes do not overlap with each other, the target will be more likely to shift toward the positive prime than toward the negative prime.

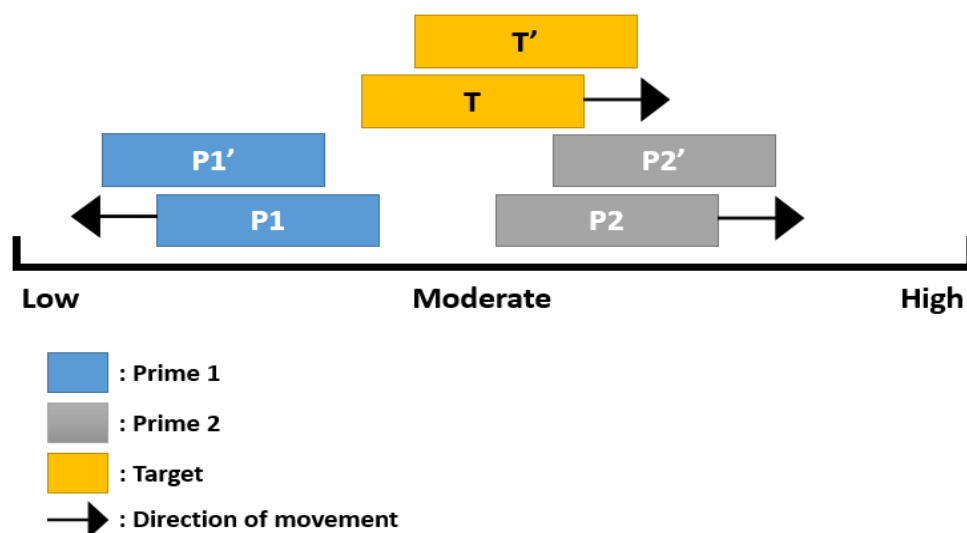


Figure 3.4 Hypothesis 3

CHAPTER 4 PRETEST

Purpose

The purpose of the pretest is twofold. We first seek to determine a suitable dimensional range for our target, a hypothetical brand of apparel advertisement. As we will be testing for the effects of contextual stimuli both positive and negative of the target, simply one prime on each side of the target, we designed for the ad to be interpreted within neutral ratings, and the results of the pretest would verify if the target range would be suitable. The pretest also serves as a practice in defining a dimensional range. As the requirement of our survey is relatively new and differs from the conventional one-point rating questionnaires, results from the pretest will help us understand the level of clarity and practicality of the questions in our survey.

Participants

A total of forty people, both under- and postgraduate students from National Taiwan Normal University participated in the pretest. All of these participants were recruited randomly from classes held in National Taiwan Normal University, and carried out during their respective class breaks.

Design

In our pretest, seven different dimensions for which university students would most likely be familiar with were selected as basis for testing the primes. Each dimension contains 2-3 primes, where each prime given within each dimension was ensured to be those highly familiar amongst our target participants, university students. These seven dimensions are namely:

1. Hardness of objects
2. Sweetness of food
3. Swiftness of animals' movement
4. Prestige level of products
5. Durability of products
6. Fashion of products
7. Price of products

All participants answered the same pretest questionnaire, which consisted of two parts and included all seven dimensions of questions. In order to minimise interference of prime influence, dimensions chosen were meant to be as unrelated with one another; the first part of the questionnaire comprised of twelve questions on three dimensions, “Hardness of objects”, “Sweetness of food” and “Swiftness of animals' movement”. Primes within each of these dimensions were designed to cover both wide and narrow ranges in all low, high as well as moderately rated situations on a 0 – 10 rating scale. For example, “hardness of blanket” was given to participants as a range of 1.5-5 (negatively wide) while “hardness of cement” and “sweetness of oranges” were given as a range of 9.5-10 (positively narrow) and 2.5-8.5 (moderately wide) respectively. In addition, there were also questions that required participants to think of items of hardness within 5-9.5 (positively wide) range, animals with movement within 0.5-1 (negatively narrow) range of swiftness, as well as to rate the swiftness of giraffe's movement, expected to be moderately narrow.

After participants have gone through the practice of giving representative value and range ratings, as well as providing items they can think of within a given range rating in the first part of the questionnaire, we then present our target, a hypothetical brand of apparel advertisement, for their review. Similarly, participants were asked to rate the target brand on dimensions as unrelated to one another as possible, namely, the target brand's prestige level,

durability, fashion and price. The dimension of prestige level was presented first amongst the rest, in order to diminish possible influence of other dimensions.

Procedure

The written questionnaire of the pretest was completed by 40 random, undergraduates and post-graduates students of National Taiwan Normal University. We approached random classes and obtained permission from respective lecturing professors to distribute our paper questionnaires during class breaks. Participants who agreed to take part in the study were seated individually in the classrooms they were having lessons in, and asked to complete a ten-page booklet consisting of two sections.

In the first part of the questionnaire, participants were told that they were participating in a market research for a new apparel brand, and would first be tested for their level of observation and sensitivity towards objects they come across daily. They were then instructed to read six sample questions on 2 dimensions, “hardness of objects” and “sweetness of food”. Three questions were asked on each dimension; the first question required participants to give a one-point score rating that best represents the item being evaluated, from a scale of 0 (e.g. least sweet) to 10 (e.g. most sweet) in intervals of 0.5. Participants were next asked to give a range rating, a lowest and highest bound to indicate an interpretative range for items on the same 0 to 10 scale. In the final question, participants were assigned a range and asked to provide an item within the given range on a specific dimension.

(1) 最能代表的值

若請您由下列量表中圈選您認為「棉被」最能代表的「軟硬程度」的分數，其中0表示「最軟」，10表示「最硬」。您可能會想說，棉被普遍來說較鬆軟，但又不是很極端的軟，若放在0~10的尺度中，「2.5」可能是最能代表棉被的柔軟，則請在下方的量表中，將數字「2.5」圈選出來。

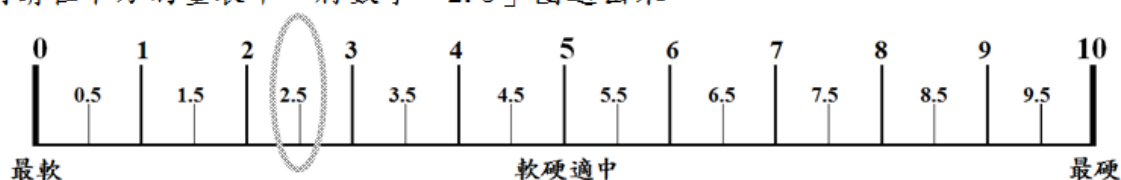


Figure 4.1 An example of the rating scale on representative value most fitted for the dimension of “Hardness” in part 1 of the pretest.

(2) 適當的範圍

但若將問題改成：請您由下列量表中選出您認為「棉被」可以表現「軟硬程度」的適當範圍，並且找出此範圍的「最高值」與「最低值」。您可能就會回想印象中最軟的棉被，像是蠶絲被或羽絨被，大約是在「1.5」的柔軟度；另一方面也回想著最硬的棉被，可能是放在櫥櫃中好幾年的舊棉被，大約是「5」的硬度，所以覺得棉被能表現的「軟硬程度」的範圍，可能落於最低值「1.5」和最高值「5」之間，則請在下方的量表中，將數字「1.5」和「5」圈選出來。

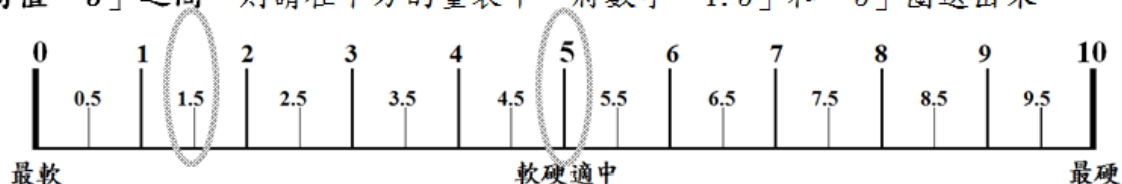


Figure 4.2 An example of the rating scale on interpretative range for the dimension of “Hardness” in part 1 of the pretest.

(3) 寫出一個具體的物品

問題也可能由另一個方式問，例如：請您試著列出「軟硬程度」介於「9.5~10」之間的一個物品。則您可能會試著去想一個很硬的東西（因為此範圍靠近最硬的極端值），而且每一種類的硬度都很固定（因為此範圍很窄），再從您的記憶中去搜尋，發現「鋼筋水泥」恰好符合以上的條件，因此決定以鋼筋水泥作為「軟硬程度」落在「9.5~10」之間的代表，則請在量表下方的答案格中填上「鋼筋水泥」。

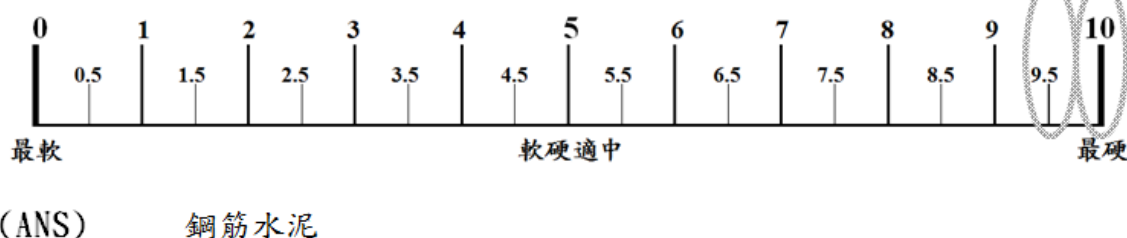


Figure 4.3 An example of an item required, given a specific dimensional range on the rating scale for the dimension of “Hardness” in part 1 of the pretest.

A spot-the-difference picture game designed to disrupt the participants’ concentration and eliminate any unexpected context effects was subsequently inserted between the two sections of the questionnaire booklet. Participants were asked to find seven differences from two similar pictures before proceeding to the second section.

The second part of the questionnaire was similar to the first, except only the one-point representative score and interpretative range rating on four dimensions of our target product brand advertisement were evaluated. Participants were told they were going to be evaluating a new apparel brand and before being presented an advertisement of our target apparel brand, Belissimo. Participants were asked to take a look carefully at the advertisement and evaluate the representative value and interpretative range of Belissimo on four dimensions, “prestige level”, “durability”, “fashion” and “price”, on a scale from 0 (e.g. least prestigious) to 10 (e.g. most prestigious). After completing the questions, participants were debriefed, thanked and dismissed.

Results

The results of the pretest essentially gave us the mean and standard deviation values of our target advertisement's best representative score, lower and higher bound values for the ranges of items tested on the seven dimensions. Essentially, the interpretative range of our target apparel brand advertisement was determined to be between 3.72 and 5.88 (Table 4.1), with both p-values showing that the range is not significantly different from our ideal range of 4 to 6 respectively, thereby allowing the target apparel brand to be used for the main experiment.

Table 4.1

Target's Mean and Standard Deviation for the Dimension of "Prestige" in Question 1 of Part 2 of the Pretest

Target	Point Mean	Low Mean	High Mean	Point SD	Low SD	High SD
Prestige	4.65	3.72	5.88	1.29	1.20	1.52

Conclusions

Based on the evaluations of our forty participants, it is shown that all participants were capable of defining interpretative ranges on the dimensions asked, indicating that the level of clarity and familiarity of the items asked on each dimension was sufficient for our main experiment. All items were subsequently included in the main experiment thereafter. More importantly, results from the pretest served as an affirmation of the suitability of our target advertisement to be applied in our main experiment, falling at the range of lower bound, $M = 3.72$ ($t(29) = -1.29$, $p = 0.21$), in relation to 4, and upper bound $M = 5.88$ ($t(29) = -0.42$, $p = 0.68$), in relation to 6.

CHAPTER 5 EXPERIMENT 1

Overview

Experiment 1 tested on the effect of context range non-overlap on occurrence of assimilation or contrast. In essence, this two-stage main experiment was to test for any movement of the contexts and target's representative values, as well as changes in their respective boundary values pre- and post-context effect. While Chien et al.'s (2010) Dimensional Range Overlap Model suggest that an overlap/non-overlap between the context/target ranges will cause the occurrence of an assimilation or contrast effect, we also infer from Hsiao's (2002) Reciprocity Hypothesis that both contexts will have a mutual effect on each other when presented at once, thereby resulting in concurrent shifts towards or away from each other. Therefore using the same fixed context range width with the same relative distance between the presentative values of both contexts, we manipulated Prime 1 and 2 to have a 0.5 non-overlap in between them in Stage 1 of Experiment 1, and a comparison of whether this degree of non-overlap will change will be done with results collected in Stage 2.

Hypothesis Recap

This experiment shall focus on testing for a context effect, which we expect would be a contrast, arising on a lack of dimensional range overlap between two contexts.

Hypothesis 1: When prime 1 and 2 have different valences and there is no overlap between the two primes initially, then prime 1 and prime 2 will contrast away from each other.

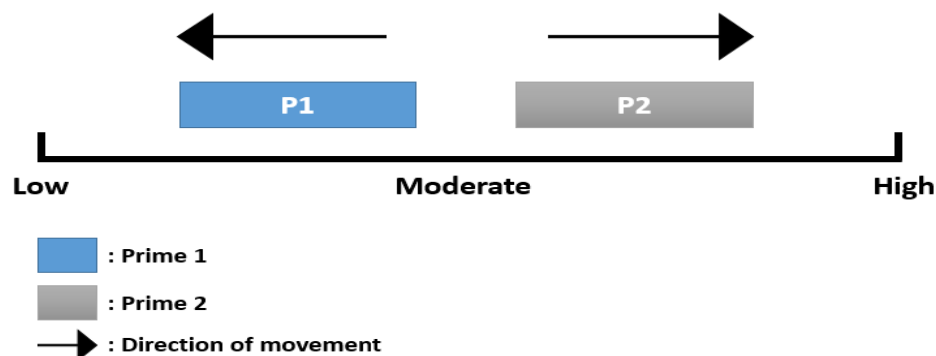


Figure 5.1 Hypothesis 1

Participants and Design

A total of 31 young adults aged between 20 and 30 years old were recruited to participate in the study; most of these participants were undergraduates and postgraduate students from National Taiwan Normal University, while the rest were recruited via online postings. Participants signed up voluntarily for one of the 32 sessions, each lasting about ten to fifteen minutes, held over four days of the study, in exchange for a lucky draw chance to win NTD500 worth of Uni-President vouchers.

The three-section Experiment 1 was carried out by way of a within-participants design, with dimensions retained from the pretest, as well as new dimensions included. Similar to the design of our pretest, the first section of the questionnaire served as a practice for participants to get used to giving representative value and range ratings, as well as providing items they can think of within a given range rating. An initial non-overlap of 0.5 was manipulated Prime 1 and 2, within our manipulated range 2.5-4.5 and 5-7 respectively, by way of the computer programme. Part 3 required participants to give ratings again after both contexts have been mutually influenced. The target apparel brand advertisement will not be shown in this set of questionnaire at all.

Procedure

The study questionnaire of Experiment 1 was saved on one of the four computers we placed in our study room at National Taiwan Normal University. As there was a lack of study rooms and computers to accommodate all 31 students at once, we held the experiments in 8 different sessions over four days, with about three to four students in each session. Each participant was randomly assigned to a seat, with one of four computers was pre-set with Experiment 1 questionnaire.

In the beginning of the questionnaire, participants were told they would be taking part in a study to test their reading and cognitive abilities of various advertisements and articles shown in magazines currently existing in the market. As with the pretest, participants were told in the first section, the practice exercise, that they would first be tested on their observation and sensitivity abilities, and asked to practise giving one-point representative values, interpretational dimensional ranges with upper and lower bounds, as well as to think of an item within a given range and dimension. The first two sample questions in this practice consisted of two dimensions, “hardness of objects” and “sweetness of food”, followed by two practice questions on dimensions of “hardness of objects” and “swiftness of animals’ movement”.

In the second part of the questionnaire, participants were told they would be tested on their imagination abilities, and were subsequently asked to provide apparel brands, which would be used as our context 1 and 2 in the next section. In order to reduce the likelihood of participants guessing the purpose of our questionnaire, we first asked participants to provide an apparel brand for context 1 as fitting within our given range of 2.5-4.5 prestige level (low) as possible, before asking for irrelevant car and handphone brands within the range of 5-6 (moderate) and 8-10 (high) on dimensions “safety level” and “price level” respectively. A psychological test meant to disrupt their concentration from previous questions was then inserted, followed by asking for another apparel brand for context 2, as best fitted within the prestige range of 5-7 (moderate). The section ended by requiring participants to provide another irrelevant fast-food chain and handphone brand within the health and fashion range of 1-3 (low) and 7-9 (high) respectively.

Before the commencement of the third section, a Sudoku game was placed to reduce participants’ accessibility of previously given ratings.

In the beginning of section 3, participants were told that the computer programme has chosen the clothing industry for them to answer subsequent questions on. Context 1 and 2, which they had provided in Section 2, were brought up then and participants were asked to give representative values and dimensional range ratings for both contexts again.

Results

Experiment 1

Manipulation check. After taking all the data into consideration for an analysis, results from our within-participants t-test (Table 5.1) showed that the lower and upper bounds of the two contexts; the lower bound of Prime 1 ($M = 2.48$) did not differ significantly from its initially manipulated lower bound of $M = 2.50$; $t(30) = -0.08$, $p = 0.94$), as neither was its upper bound of $M = 4.63$, compared to the initial $M = 4.50$; $t(30) = 0.58$, $p = 0.57$. Similarly, the lower ($M = 5.27$) and upper bounds of Prime 2 ($M = 7.08$) were also not statistically different from the initial value of 5 and 7 respectively; $t(30) = 1.28$, $p = 0.21$ and $t(30) = 0.38$, $p = 0.71$ correspondingly.

A negligible shift in the non-overlap range between Prime 1 and 2 after their mutual effects were also reflected; though the non-overlap range slightly widened as we had expected ($M = 0.65$; $t(30) = 0.76$, $p = 0.45$), it was not significantly different from its initial non-overlap range 0.5, suggesting that contrast effect did not occur as we had expected.

Prime 1 and 2 evaluations. Paired sample t-tests were also conducted to compare the representative values (results presented in Table 5.1 and Figure 5.2); the positive context, Prime 2, generated slightly higher prestige ratings ($M = 6.13$) than its initial rating ($M = 6.00$); $t(30) = -0.78$, $p = 0.44$, while the negative context, Prime 1 also produced higher post-context prestige ratings ($M = 3.68$) than its context-free ratings ($M = 3.50$); $t(30) = -0.79$, $p = 0.44$.

Further comparisons were made on the representative value differences of the Stage 1

context-free situation between both primes ($M = 2.50$) with that of Stage 2 ($M = 2.45$), and found that both primes did not in fact move away from each other simultaneously; $t(30) = 0.19$, $p = 0.85$, given the initial lack of overlap in between them. Our Hypothesis 1 was henceforth not confirmed.

Table 5.1

Means for the two primes and the target of Experiment 1

Prime 1	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	3.50	2.50	4.50
Stage 2 Mean	3.68	2.48	4.63

Prime 2	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	6.00	5.00	7.00
Stage 2 Mean	6.13	5.27	7.08

Prime 1 and 2	Non-overlap Range	Distance between Representative Values
Stage 1 Mean	0.50	2.50
Stage 2 Mean	0.65	2.45

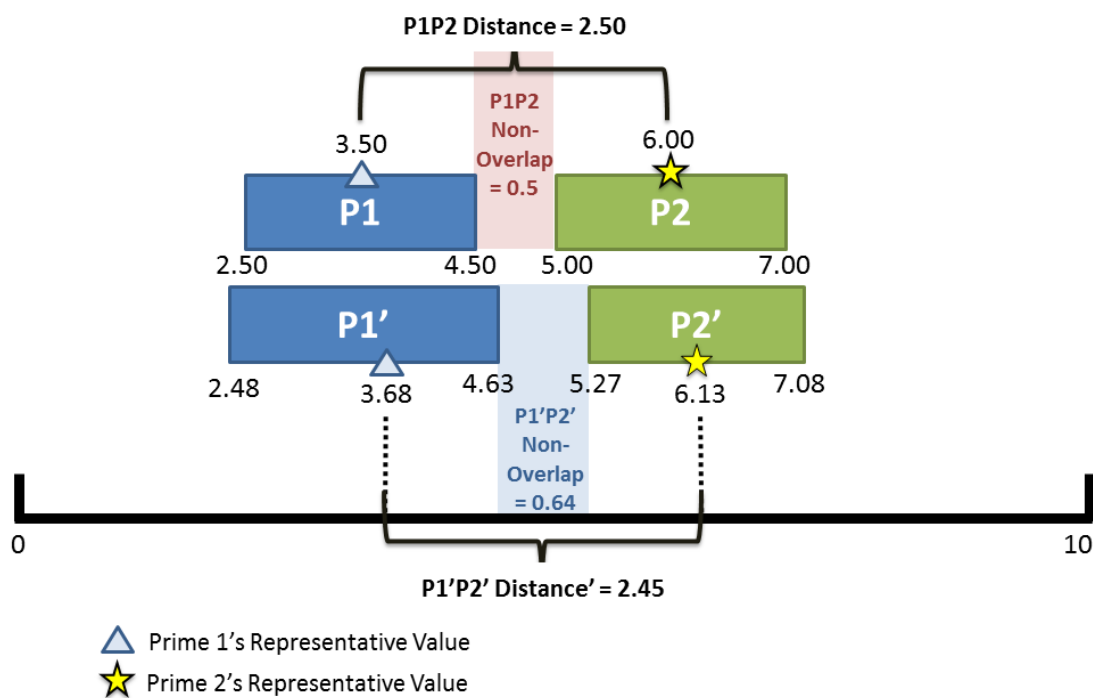


Figure 5.2 Diagram of movements of Prime 1 and 2 in Experiment 1, indicating respective representative values, lower and upper bound ratings.

Further Analyses

Manipulation check. We selected those sets of data, 13 in all, with which had a post-context effect overlap range that fulfilled our expectations (> 0.5) for further analyses. From the results generated and depicted in Table 5.2, we can see that the slight shift in the upper bound of Prime 1 and significant shift in the lower bound of Prime 2, both in opposite directions as expected, as well as the shortened context ranges of both Prime 1 and Prime 2 from their initially manipulated range of 2, consequentially created a significantly larger non-overlap range with an $M = 1.69$; $t(12) = 5.72$, $p < 0.001$.

Prime 1 and target evaluation. Results once again did not confirm any statistically substantial movements in the lower ($M = 2.54$) and upper ($M = 4.15$) bound of the negative context, Prime 1. However, the lower bound of Prime 2 showed significant movement higher up the scale ($M = 5.85$ in relation to the initial $M = 5.00$; $t(12) = 2.42$, $p < 0.05$, though its slightly higher upper bound of $M = 7.31$ was not proven statistically compared to the initial $M = 7.00$; $t(12) = 0.74$, $p = 0.48$.

There was also no change at all in the representative value of Prime 1, from Stage 1 to Stage 2 in our paired sample t-test, with changes almost as negligible in Prime 2 too. The distance between representative values of Prime 1 and 2 also vaguely differ from Stage 1 ($M = 2.50$) to 2 ($M = 2.65$; $t(12) = -0.36$, $p = 0.73$), though it did widen as we expected it to in the occurrence of a contrast effect. (Please refer to Table 5.2 and Figure 5.3)

Table 5.2

Means for the two primes of Experiment 1 on selected data sets

Prime 1	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	3.50	2.50	4.50
Stage 2 Mean	3.50	2.54	4.15

Prime 2	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	6.00	5.00	7.00
Stage 2 Mean	6.15	5.85	7.31

Prime 1 and 2	Non-overlap Range	Distance between Representative Values
Stage 1 Mean	0.50	2.50
Stage 2 Mean	1.69	2.65

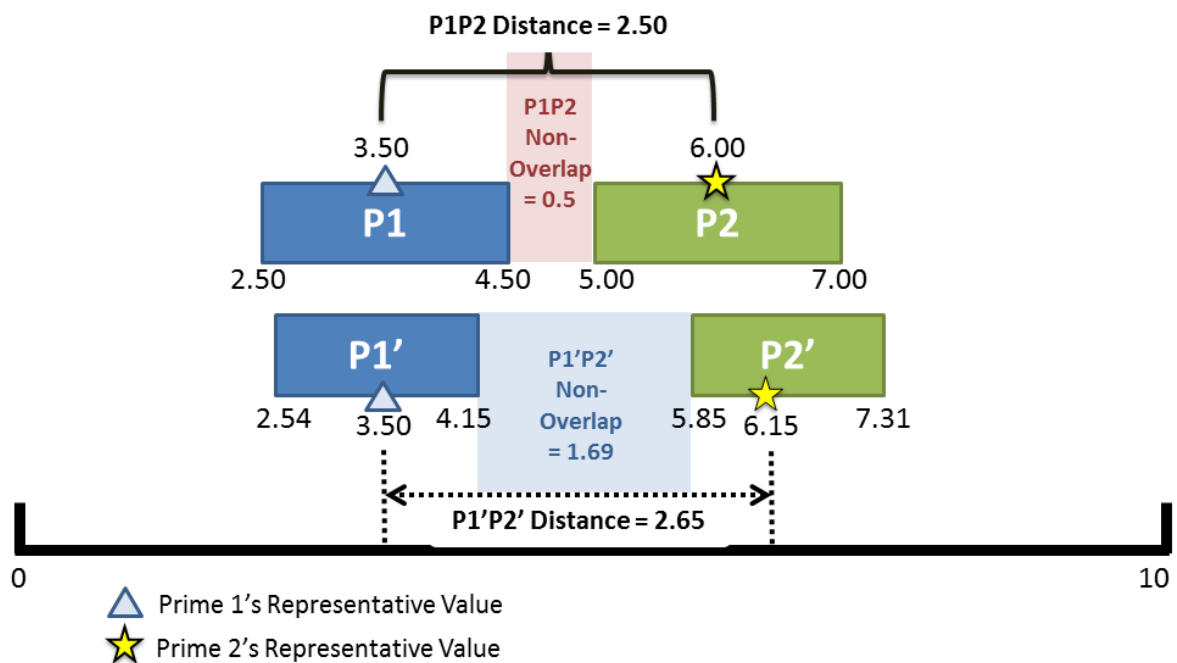


Figure 5.3 Diagram of movements of Prime 1 and 2 on selected data sets in Experiment 1, indicating respective representative values, lower and upper bound ratings.

CHAPTER 6 EXPERIMENT 2

Overview

In Experiment 2A and 2B, we set to test the context effect of range overlap of Prime 1 and 2 with target separately according to our Hypotheses 2A and 2B, on occurrence of assimilation. This study is conceptually identical to Hsiao's (2002) Reciprocity Hypothesis where both contexts, tested separately with the target, will move simultaneously with the target, towards each other, in the situation where an overlap exists between them. The current case however, shall lay ground for our final hypotheses hereinafter, to test the post-context effect movements of the target stimuli and contexts when they were presented at once.

Hypotheses Recap

Each of the two reported experiments tested two key hypotheses on the occurrences of assimilation effect where a dimensional range overlap exist between the context and target, one on each valence of the target.

Hypothesis 2A: For the condition in which the prime on the negative valence of the target is wide enough to create an overlap with the target initially, then both the prime and target will assimilate towards each other.

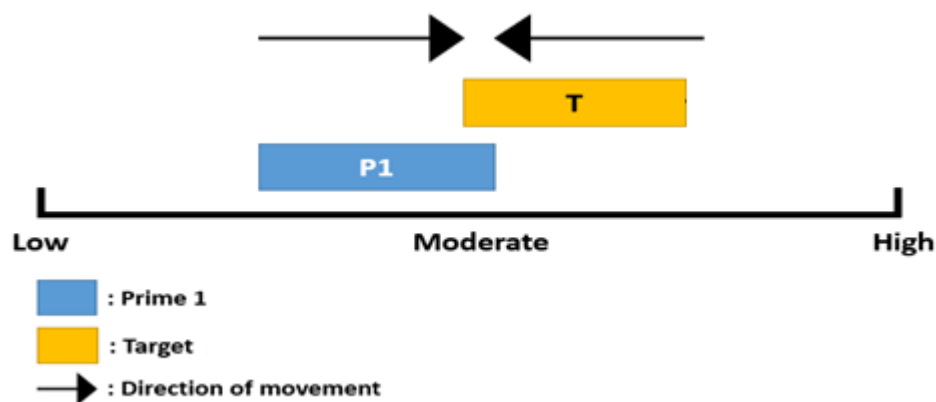


Figure 6.1 Hypothesis 2A

Hypothesis 2B: For the condition in which the prime on the positive valence of the target is wide enough to create an overlap with the target initially, then both the prime and target will assimilate towards each other.

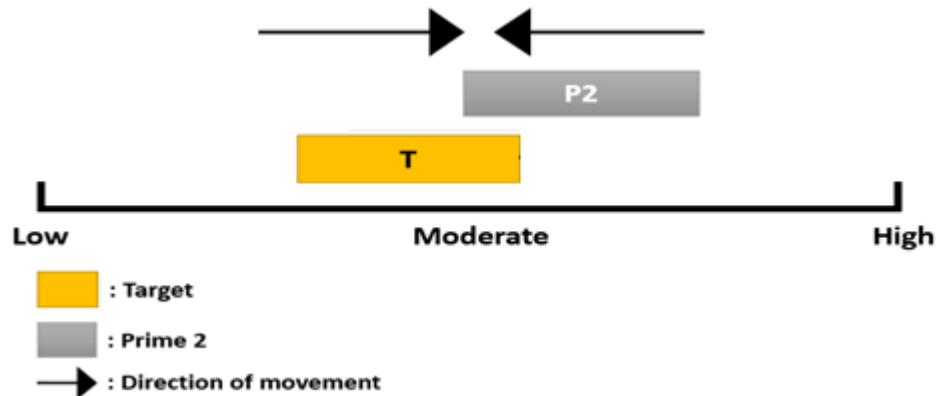


Figure 6.2 Hypothesis 2B

Participants and Design

The four-section Experiment 2A & 2B was carried out by way of a within-participants design, conducted on 50 young adults, with 25 participants each for each condition. These participants, aged between 20 and 30 years old, are mostly undergraduates and postgraduate students from National Taiwan Normal University, either recruited in the school campus or via online postings. Participants signed up voluntarily for one of the 32 sessions held to conduct all three main experiments, each lasting about ten to fifteen minutes, held over four days of the study, in exchange for a lucky draw chance to win NTD500 worth of Uni-President vouchers. They were subsequently randomly assigned to either one of the experimental conditions in this study.

Each of the reported experiment 2A and 2B also consist of two stages; the first stage was designed to establish participants' context-free representative score, as well as both lower and higher bound values of items' ranges, while the second stage would be their post-priming representative values and item boundaries. In either of the experimental conditions,

the VBA programme in which the questionnaire was written on was manipulated to generate Prime 1's range to be exactly 0.5 on the negative valence of the target range (Experiment 2A), while Prime 2 would appear to have an overlap range of exactly 1 on the positive valence of participants' target range ratings (Experiment 2B).

Procedure

The introductory statements and practice exercise given in this study was identical to that of Experiment 1, after which participants working on both questionnaires were shown several advertisements (i.e. Motorola, McDonalds, Mercedes-Benz) and asked to give representative values, as well as item boundaries for each brand advertisement shown. Our hypothetical target apparel brand advertisement, Belissimo, which was determined to be of a range between 3.72 to 5.88 in the pretest, was used here in this main experiment was included and introduced before all other advertisements, and all values given would serve as context-free target ratings. This was followed by a psychology test.

In a similar section two of the questionnaire, participants were told they would be tested on their imagination abilities, and asked to input one apparel brand each in Experiment 2A and Experiment 2B, in which they thought would be associated with a specific prestige range. This second section of the questionnaire was that of our context-free situation; Prime 1 and 2 were manipulated to overlap with target 0.5 and 1 respectively in Experiment 2A and 2B initially. The brands suggested would later be used as our Prime 1 and 2 respectively in Experiment 2A and 2B. To reduce the likelihood that participants may guess the purpose of the study, brands of two other irrelevant items (i.e. cars, fast-food chains) and dimensions (i.e. safety level, health level) were also asked in both questionnaires. A Sudoku game meant to compel the use of participants' cognitive abilities, and possibly disrupt their concentration

and accessibility of previously primed item, were inserted for the participants to complete, before they proceeded to the next section.

In the final section of both questionnaires, participants were similarly told that the computer has chosen the clothing industry for them to answer subsequent questions on. They were also reminded of the respective Prime 1 and 2 brands they specified in the section before, and asked to re-rate the representative value and interpretative range (lower and upper bounds) on the “prestige level” dimension of Belissimo (the target) and the corresponding prime of the condition.

Results

Experiment 2A

Manipulation overlap. Results from our within-participants t-tests (Table 6.1) showed that when there was an overlap in the perceived prestige ranges of Prime 1 on the negative valence of the target, assimilation effect arose and both the context and target shifted towards each other concurrently. Shifts in the respective context and target range ratings resulted in a substantially greater overlap ($M = 1.14$) than the 0.5 manipulated overlap initially; $t(24) = 4.11$, $p < 0.001$, thereby supporting Hypothesis 2A. (Please refer to Figure 6.3)

Prime 1 and target evaluation. The initial lower bound of $M = 2.68$ in relation to the post-influenced lower bound $M = 3.50$; $t(24) = -3.64$, $p < 0.01$) and initial upper bounds of Prime 1 $M = 4.68$ as compared to the upper bound of $M = 5.50$ after; $t(24) = -3.31$, $p < 0.01$, showed that Prime 1 has moved considerably towards the target as anticipated. The same cannot be said for the target, whose results are mixed with a relatively shortened range in Stage 2; its post-context effect lower bound contrasted away from Prime 1 ($M = 4.40$) compared with its initial lower bound ($M = 4.18$); $t(24) = -0.68$, $p = 0.51$, although its upper

bound did significantly shift in the direction of Prime 1 ($M = 6.16$) from its initial upper bound of 6.82; $t(24) = 2.50$, $p < 0.05$.

Paired sample t-tests were also conducted to compare the representative values (Table 6.1); Prime 1 generated higher prestige ratings ($M = 4.42$) than its initial rating ($M = 3.68$); $t(24) = -2.70$, $p = 0.01$, while the target also produced a slightly lower post-context prestige ratings as expected ($M = 5.00$) than its initial context-free ratings ($M = 5.18$); $t(24) = 0.78$, $p = 0.45$. The distance between the post-context effect representative values of Prime 1 and target ($M = 0.58$) was found to be shorter than in context-free Stage 1 ($M = 1.50$); $t(24) = 3.07$, $p < 0.01$, indicating an assimilation effect and further confirming our hypothesis.

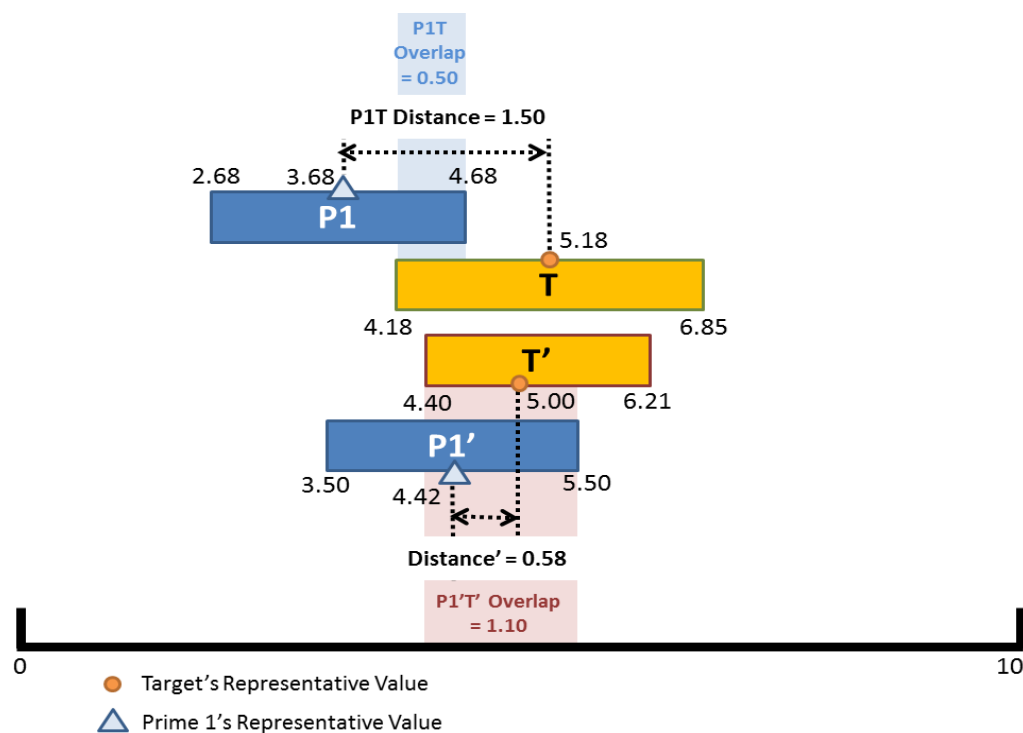


Figure 6.3 Diagram of movements of Prime 1 and target in Experiment 2, indicating respective representative values, lower and upper bound ratings.

Table 6.1

Means for Prime 1 and the target in condition 1 of Experiment 2

Prime 1	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	3.68	2.68	4.68
Stage 2 Mean	4.42	3.50	5.50

Target	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	5.18	4.18	6.85
Stage 2 Mean	5.00	4.40	6.21

Prime 1 and Target	Overlap Range	Distance between Representative Values
Stage 1 Mean	0.50	1.50
Stage 2 Mean	1.14	0.58

Experiment 2B

Manipulation check. Similarly, results from our within-participants t-tests (Table 6.2) showed that when there was an overlap in the perceived prestige ranges of Prime 2 on the positive valence of the target, assimilation effect caused both the context and target to simultaneously shift towards each other.

Prime 2 and target evaluation. However, this assimilation between Prime 2 and target is not statistically proven; the context range of Prime 2 was stretched, with its lower ($M = 4.26$) assimilating with the target range but upper bound ($M = 6.56$) contrasting from the target. These lower and upper bounds of Prime 2 in Stage 2 however did not significantly differ from that of context-free Stage 1, where the lower and upper bounds have means of 4.40 and 6.40 respectively; $t(24) = 0.46$, $p = 0.65$ and $t(24) = -0.65$, $p = 0.53$ for lower and upper bound correspondingly. The target range on the other hand, provided more comforting results, with both the lower and upper bound of target shifting towards Prime 2. There was a

significant difference in the lower bounds of the target before ($M = 2.98$) and after context effect ($M = 3.40$); $t(24) = -2.40, p < 0.05$). Though the upper bound of the target also assimilated with Prime 2, the boundary ratings were not significantly different in Stage 2 ($M = 5.70$) as in Stage 1 ($M = 5.40$); $t(24) = -1.29, p = 0.21$. As a result, though a greater overlap ($M = 1.44$) range was produced after the mutual effect of Prime 2 and target, it was not confirmed statistically ($t(24) = 1.07, p = 0.3$), thereby not supportive of Hypothesis 2B. (Please refer to Figure 6.4)

In subsequent paired sample t-tests conducted (Table 6.2), Prime 2 generated higher prestige representative value ratings ($M = 5.56$) in Stage 2 than it was in Stage 1 ($M = 5.40$); $t(24) = -0.16, p = 0.50$). On the contrary, the perceived prestige representative value generated from a target shift after context effect assimilated with Prime 2 as we expected ($M = 4.34$), compared to the pre-context effect representative value ($M = 3.98$); $t(24) = -1.76, p < 0.1$. The distance between the pre- ($M = 1.42$) and post-context effect representative values of Prime 2 and target ($M = 1.22$) indicated an assimilation between the two, though the shift was not statistically proven; $t(24) = 0.72, p = 0.48$). Hypothesis 2B is therefore not confirmed.

Table 6.2

Means for Prime 2 and the target in condition 2 of Experiment 2

Prime 2	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	5.40	4.40	6.40
Stage 2 Mean	5.56	4.26	6.56

Target	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	3.98	2.98	5.40
Stage 2 Mean	4.34	3.40	5.70

Prime 2 and Target	Overlap Range	Distance between Representative Values
Stage 1 Mean	1.00	1.42
Stage 2 Mean	1.44	1.22

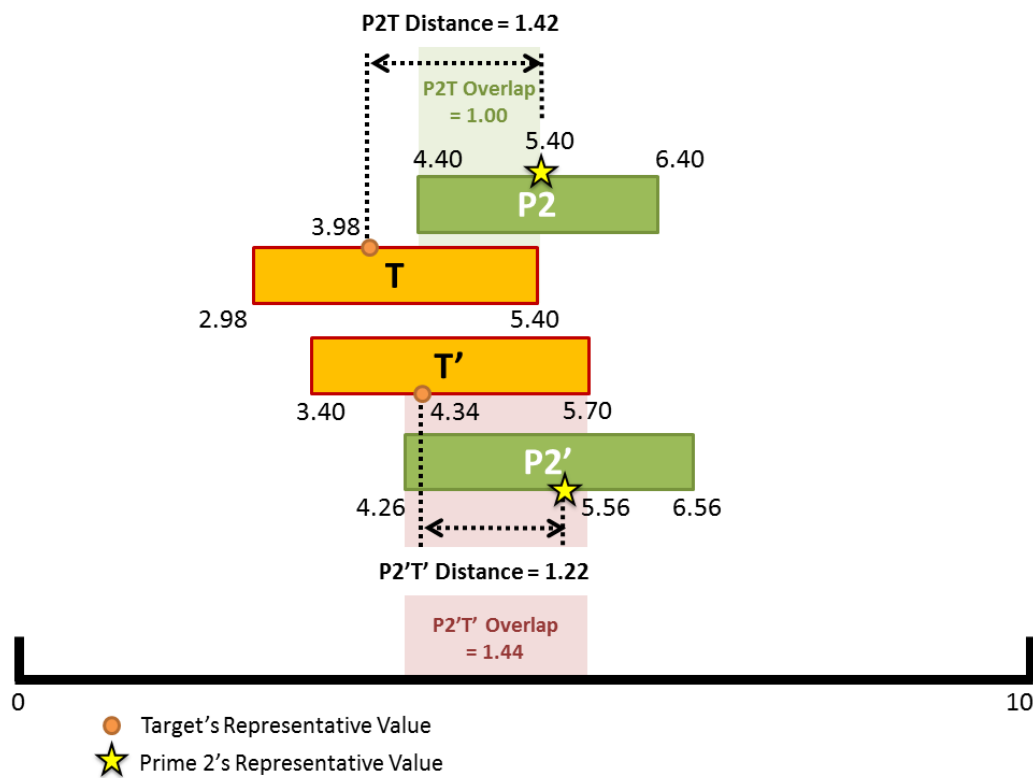


Figure 6.4 Diagram of movements of Prime 2 and target in Experiment 2, indicating respective representative values, lower and upper bound ratings.

Further Analyses (Experiment 2B)

Manipulation check. Similar to Experiment 1, we sieved out a total of 11 data sets, with which had a post-context effect overlap range satisfying our expectations (> 0.5) for further analyses. A general comparison of Prime 1 and the target, before and after context effect, reflected that both ranges have indeed assimilated towards each other, with all perceived prestige representative values as well as upper and lower bound ranges moving in directions as we had expected. Expectedly, results also revealed a significant difference in the degree of overlap ($M = 2.91$) from the initial manipulated range of 1.00; $t(10) = 3.04$, $p = 0.01$, thereby supporting our hypothesis in this case. (Please refer to Table 6.3 and Figure 6.5)

Prime 2 and target evaluation. Upon scrutiny, only shifts in the lower bound of Prime 2 ($M = 3.00$) and the upper bound of the target range ($M = 6.05$) were significant; $t(10) = 3.34$, $p < 0.01$ and $t(10) = -1.79$, $p = 0.1$ respectively. In addition, there was a significant difference in the distance between the representative values of Prime 2 and the target, with the paired sample t-test presenting a Stage 1 mean of 1.09 compared to a Stage 2 mean of 0.27; $t(10) = 1.85$, $p < 0.1$, hence supporting Hypothesis 2B.

Table 6.3

Means for Prime 2 and the target in condition 2 of Experiment 1 on selected data sets

Prime 2	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	5.32	4.32	6.32
Stage 2 Mean	4.73	3.00	6.05

Target	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	4.23	2.91	5.32
Stage 2 Mean	4.46	3.14	6.05

Prime 2 and Target	Overlap Range	Distance between Representative Values
Stage 1 Mean	1.00	1.09
Stage 2 Mean	2.91	0.27

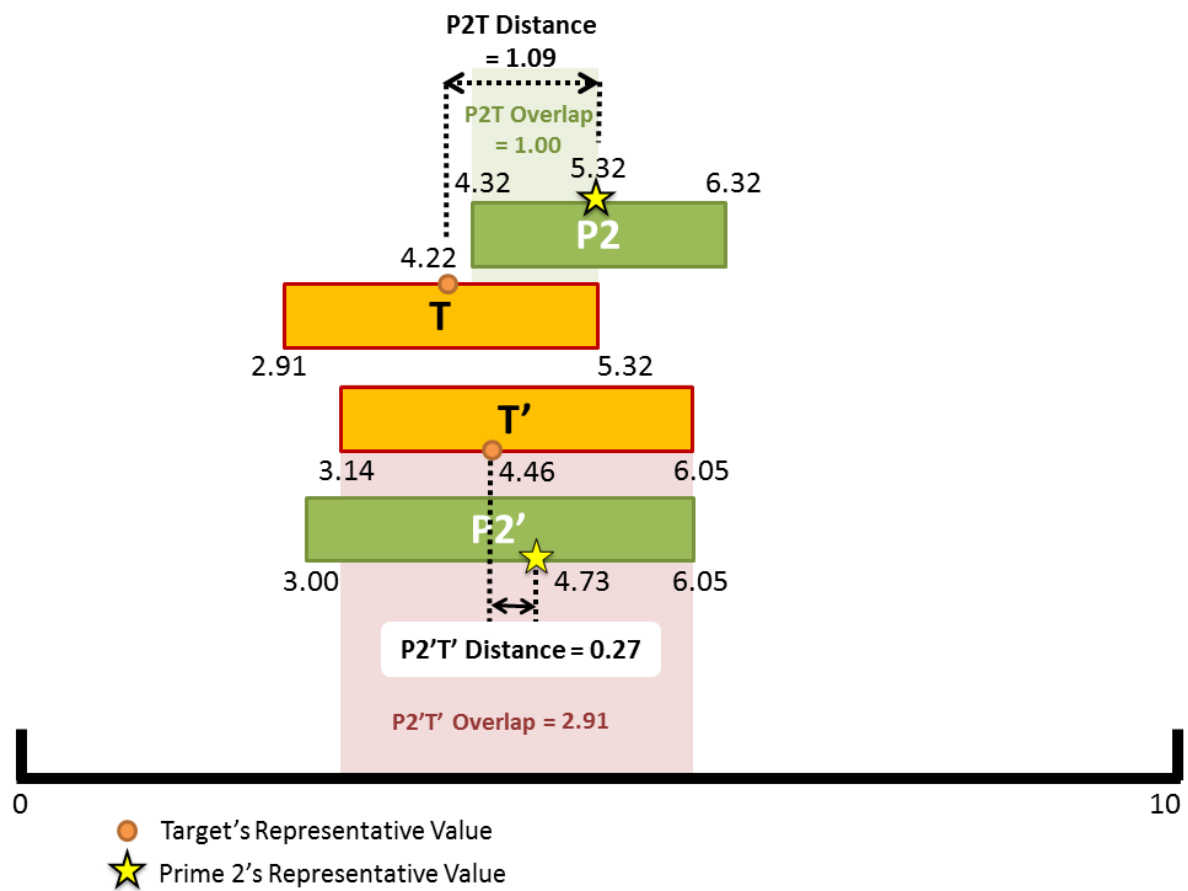


Figure 6.5 Diagram of movements of Prime 2 and target on selected data sets in Experiment 2, indicating respective representative values, lower and upper bound ratings.

CHAPTER 7 EXPERIMENT 3

Overview

Experiment 3 was conducted to examine a mixed prime condition, namely one prime each on the positive and negative of the target. It will focus on the presence of a dimensional range overlap each prime has with the target, as well as the non-overlap that exist between both primes at the same time; the subsequent assimilation or contrast effect produced by the mixed prime condition in which caused the consequential moves would be the interest of this experiment.

Hypothesis Recap

Hypothesis 3: For the condition in which the two primes have different valences and each overlap with the target initially, but the positive prime overlaps with the target at a larger amount than the negative prime, and both primes do not overlap with each other, the target will be more likely to shift toward the positive prime than toward the negative prime.

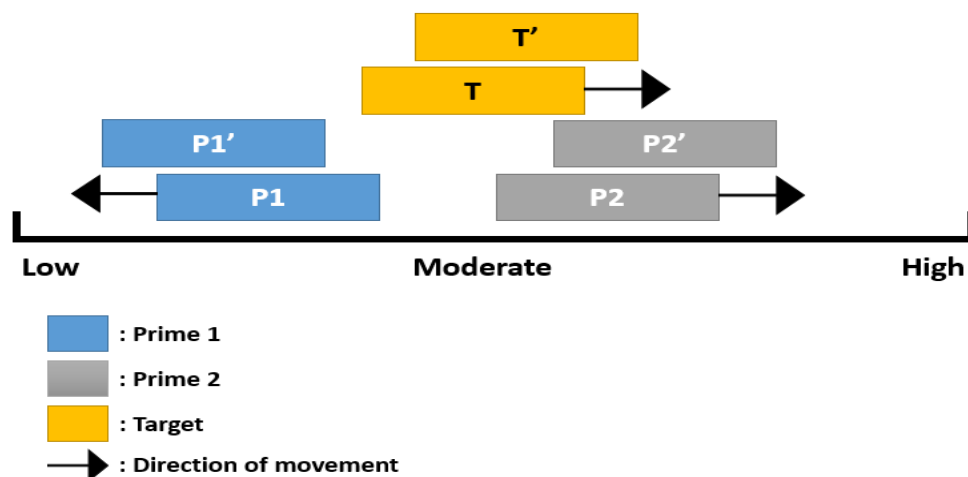


Figure 7.1 Hypothesis 3

Participants and Design

A total of 30 participants, aged between 20 and 30 years old, took part in this study. As participants were recruited altogether for all three experiments and randomly assigned to one of the four experimental conditions later, recruitment was the same as Experiment 1 and 2, where most of these participants were undergraduates and postgraduate students approached in the school campus of National Taiwan Normal University, while the rest were recruited via online postings. Participants signed up voluntarily for one of the 32 sessions held over four days of the study, in exchange for a lucky draw chance to win NTD500 worth of Uni-President vouchers.

Similar too, was the within-subject design of the experiment, consisting of four sections in the VBA-written questionnaire. The assigned Prime 1 and 2 range ratings were manipulated and preset on the questionnaire programme to have an initial overlap range of 0.5 and 1, negative and positive of the target range offered by each individual participant in the previous section respectively. As with Experiment 1 and 2, fillers, by way of psychological tests and Sudoku games meant to compel the use of participants' cognitive abilities, and possibly disrupt their concentration and accessibility of previously primed item, were inserted in between the sections, in order to collect as unaffected Stage 1 contexts and target stimuli for Stage 2 use as possible.

Procedure

The first section of Experiment 3 was identical to Experiment 2, including the psychological test that concluded the section.

Section 2 of Experiment 3 was also similar to Experiment 2, only that as the condition of this experiment would require comparisons of both primes with each other and each with the target, participants were asked to provide two apparel brands (Prime 1 and 2) instead of

one, after rating the target advertisement (representative value and item boundaries).

Participants were told to input one apparel brand (Prime 1) within a specified range, followed by brands of two other irrelevant items, also within different given ranges. A Sudoku game was placed after. Participants were subsequently asked to give another apparel brand within a different stated range (Prime 2), also followed by brands of two other irrelevant items best fitted in listed ranges. The section was wrapped up with a different Sudoku game.

Finally, participants were made to believe that the computer has chosen the clothing industry for them to answer the following questions on. After being prompted of both Prime 1 and 2 brands they specified in the section before, they were also instructed to rate the representative value and interpretative range on the “prestige level” dimension of Belissimo (the target) and both primes of the condition again.

Results

Manipulation Check

Prime 1 and Prime 2. In the condition where the mutual effect of Prime 1 and 2 was examined, the paired sample t-test revealed that the non-overlap range and the distance between their representative values were significantly different after their mutual effect than before. The Stage 1 non-overlap range was 0.5 initially, differing significantly from the Stage 2 range rating of exactly 0; $t(29) = -2.35$, $p < 0.05$. Similarly, the Stage 2 representative value distance ($M = 2.10$) was also significantly higher than in Stage 1 ($M = 2.55$); $t(29) = 1.99$, $p < 0.1$. Essentially, the changes in the non-overlap range and representative value distance suggested a statistically significant assimilation effect between Prime 1 and 2, where we had initially expected them to repel from each other at first.

Prime 1 and target. Paired sample t-tests were once again conducted to compare the overlap range and distance of the representative values between the negative context, Prime 1, and

target. As depicted in Figure 7.2, Prime 1 and target have strongly assimilated towards each other, producing statistically significant Stage 2 overlap range ($M = 1.03$) compared with its pre-context effect one ($M = 0.50$); $t(29) = 2.90$, $p < 0.01$, as well as shorter distances between their representative values, with the Stage 2 distance ($M = -0.87$) substantially shorter than its Stage 1 distance ($M = 1.40$); $t(29) = 7.30$, $p < 0.001$. While the initial overlap range of Prime 1 and target would be expected to cause an assimilation effect to occur, we did observe from the post-context effect changes in representative values, lower and upper bound ratings that target did not shift towards Prime 1 as Prime 1 shifted greatly towards the target. The significance in the overlap and distance between the representative values of Prime 1 and target was a result of the major movement in Prime 1. (Please also see Table 7.1)

Prime 2 and target. Results from the paired sample t-tests used to test the overlap range and distance of the representative values between the positive context, Prime 2, and target revealed consistent results. Firstly, the initial overlap range ($M = 1.00$) became smaller after they were mutually affected by each other ($M = 0.83$); $t(29) = -0.72$, $p = 0.48$. Next, the distance between their representative values were also shown to have lengthened in Stage 2 ($M = 1.23$) as compared to Stage 1 ($M = 1.15$); $t(29) = -0.37$, $p = 0.71$. Both the smaller overlap range and longer distance between presentative values suggest that both Prime 2 and target range have repelled from each other, though both were not supported statistically. This trend of contrast is in conflict with our expectation of an assimilation effect, to be caused by the larger overlap range ($M = 1.00$) manipulated in the study. (Please refer to Table 7.1 and Figure 7.2)

Evaluation

Prime 1. From the data analysed, it was revealed that only Prime 1 had all its Stage 2 representative value ratings as well as the upper and lower bounds significantly different

from those of its Stage 1. Its post-context affected representative value shifted substantially ($M = 3.73$) positively, as opposed to its initial value ($M = 2.98$); $t(29) = -3.28$, $p < 0.01$. Both lower and upper bound ratings of Prime 1 also showed great movements towards the higher end of the scale; the post-movement lower bound ($M = 2.88$) was significantly higher than the pre-influenced one ($M = 1.98$); $t(29) = -4.27$, $p < 0.001$, similar to that of its upper bound where the Stage 2 rating ($M = 4.77$) was also significantly higher than in Stage 1 ($M = 3.98$); $t(29) = -3.55$, $p = 0.001$).

Prime 2. On the other hand, Prime 2 also displayed vague movement positive of the scale, though its post-context affected representative value was significantly higher in Stage 2 ($M = 5.83$) than in Stage 1 ($M = 5.53$); $t(29) = -1.71$, $p < 0.1$. The lower and upper bound point-ratings were also higher, though not statistically supported; the lower bound was weakly higher after context effect ($M = 4.77$) than before ($M = 4.53$); $t(29) = -1.11$, $p = 0.28$, as with the higher upper bound ($M = 6.68$) which barely shifted rightwards of the scale from its initial upper bound ratings ($M = 6.53$); $t(29) = -0.95$, $p = 0.35$.

Target. Likewise, there were also negligible shifts made positive of the scale by the target range. Both lower and upper bound ratings of the target moved feebly higher; the post-movement lower bound ($M = 3.73$) was insignificantly higher than the pre-influenced one ($M = 3.48$); $t(29) = -1.54$, $p = 0.13$, similar to that of its upper bound where the Stage 2 rating ($M = 5.60$) was also significantly higher than in Stage 1 ($M = 5.53$); $t(29) = -0.38$, $p = 0.71$). The representative values of the target before context-effect ($M = 4.38$) was also lower than its after it was influenced ($M = 4.60$); $t(29) = -1.04$, $p = 0.31$.

Examining the mutual effects of both contexts with the target as well as with each other, namely Prime 1 with Prime 2, Prime 1 with target, and Prime 2 with target, we derived the following results.

Overall Results and Discussion

The mixed prime condition of Experiment 3 was not supported as we had hypothesised in Hypothesis 3. From the post-context effect data analysed, Prime 1 and 2 did not repel from each other as expected, given our 0.5 lack of overlap range between them. Though Prime 2 did move feebly in the direction we hypothesised, Prime 1 did not move in the negative direction nor subsequently shift leftwards of the scale to create a non-overlap with the target. (Please refer to Table 7.1 and Figure 7.2)

With a larger initial overlap between Prime 2 and the target, we had expected that though a contrast effect would take place between Prime 1 and 2, resulting in their subsequent moves negative and positive of the target respectively, an overlap between Prime 2 and the target would still exist, thereby leading them to assimilate towards each other and the latter would be more likely to shift towards the former thereafter. This is shown in the post-context effect results, where it appeared that the target range had a greater tendency to move towards Prime 2, shifting rightwards of the scale towards Prime 2, though this tendency was not confirmed statistically. (Please refer to Table 7.1 and Figure 7.2 for more details)

Table 7.1

Means for target, as well as Primes 1 and 2 in Experiment 3

Prime 1	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	2.98	1.98	3.98
Stage 2 Mean	3.73	2.88	4.77

Prime 2	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	5.53	4.53	6.53
Stage 2 Mean	5.83	4.77	6.68

Target	Representative Value	Lower Bound	Upper Bound
Stage 1 Mean	4.38	3.48	5.53
Stage 2 Mean	4.60	3.73	5.60

Prime 1 and 2	Non-Overlap Range	Distance between Representative Values
Stage 1 Mean	0.50	2.55
Stage 2 Mean	0.00	2.10

Prime 1 and Target	Overlap Range	Distance between Representative Values
Stage 1 Mean	0.50	1.40
Stage 2 Mean	1.03	-0.87

Prime 2 and Target	Overlap Range	Distance between Representative Values
Stage 1 Mean	1.00	1.15
Stage 2 Mean	0.83	1.23

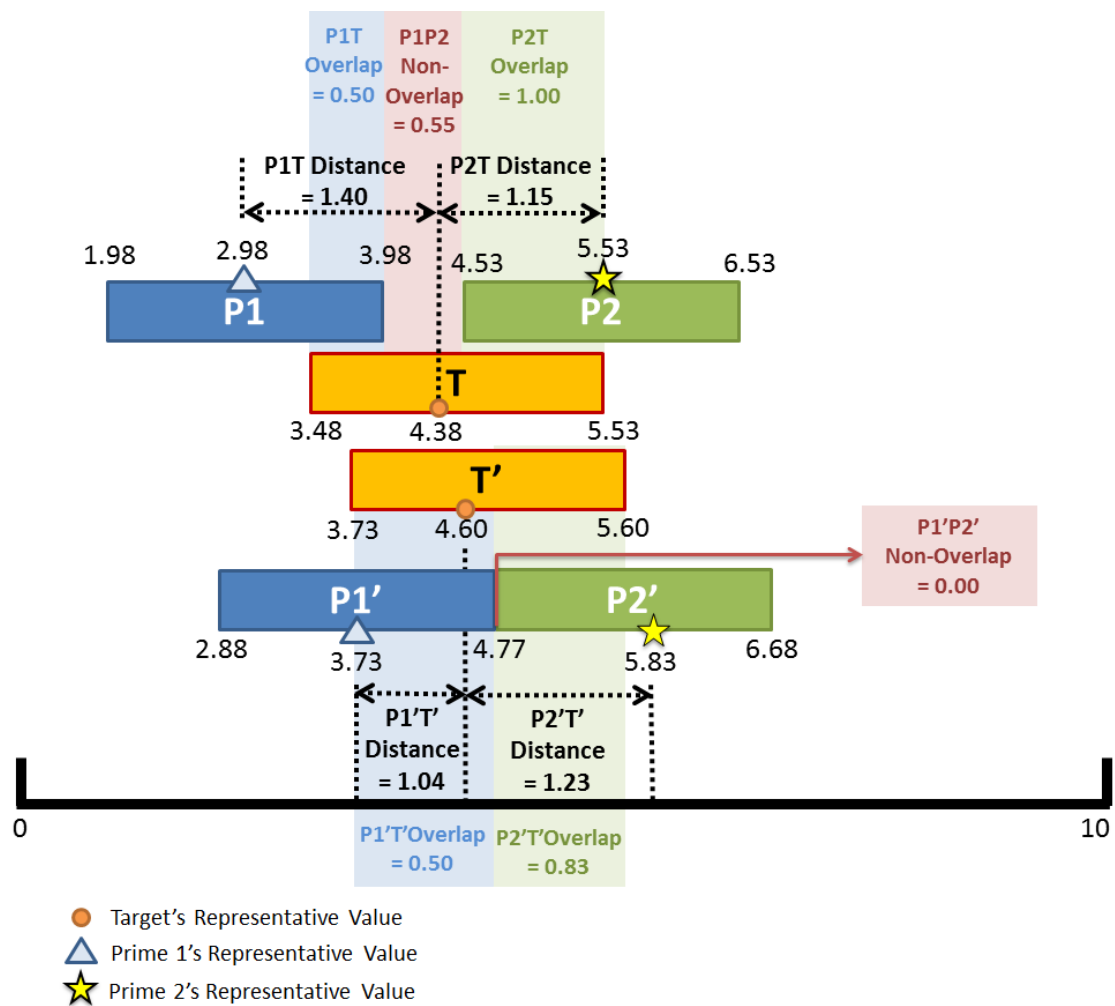


Figure 7.2 Diagram of movements of the target, as well as Primes 1 and 2 in Experiment 3, indicating respective representative values, lower and upper bound ratings.

CHAPTER 8 GENERAL DISCUSSIONS AND CONCLUSION

Conclusion Review

From the results presented, most of our observed tendencies have been consistent with the hypotheses in the current research, though a couple of them remain to be confirmed.

In the first hypothesis where two non-overlap primes were presented, the lower of Prime 1 as well as both the lower and upper bound of Prime 2 shifted in the direction of a contrast, as hypothesised. These tendencies were however not significant; Hypothesis 1 was thus not confirmed. After further analyses were ran on data sets that met our expectations, contrast effect was made more apparent; all except the lower bound of Prime 1 shifted in repelling directions, significantly widening the range of non-overlap and supporting our hypothesis.

In the next result, besides the lower bound of the target that did not move accordingly towards Prime 1 when there was an initial overlap in between them, both target and negative context, Prime 1, was proven to have assimilated, with the resulting overlap range and distance between their representative values statistically supporting Hypothesis 2A.

Likewise in the similar hypothesised situation of Hypothesis 2B, apart from the upper bound of Prime 2, on the positive valence of target, which did not move accordingly towards the target when there was an initial overlap in between them, both target and Prime 2 showed tendencies of assimilation, but changes in the overlap range and distance between their representative values could not be proven statistically. Hypothesis 2B was thereby not confirmed. Only when further analyses were ran on selected data sets did assimilation effect become more obvious; all lower and upper bounds of target and Prime 2 moved towards each other, and Hypothesis 2B was supported as the degree of overlap range and distance between their representative values became significant.

Finally, when context effects between multiple contexts and their combined prime effect on target judgment was tested, the notion of assimilation effect when there was an initial overlap was supported but could not be observed in the case when there was an initial lack of overlap. As such, Hypothesis 3 was not supported.

Limitation and Suggestions

Procedural Design

One major limitation we encountered was with the lack of participant pool. Due to the limited time and budget, we opted for our questionnaire to be written on Excel-run VBA programme. Two issues arose consequently during the testing stage of the programme; the VBA programme could neither work on outdated versions of Excel nor non-Traditional Chinese system language computers, and the file would be a relatively huge one to be sent to individual participants. As such, not only did the search of working computers that can accommodate the number of participants proved to be a challenge, the recruitment of participants was equally trying. Participants had to be present physically at one of the 32 time slots given over four days, in a specific study lab with four laptops tried and tested with our questionnaire programme, opposed to the conventional way of approaching students in their respective lecture rooms during their class breaks. The inconvenience greatly reduced their willingness to take part.

Lack of Motivation

Much as the use of computers was helpful in manipulating overlap ranges between the multiple contexts and target, as well as carrying out the whole experiment procedure, the process of recruiting participants was a tedious one. During the recruitment exercise in the school campus, participants were told that every completion of the main experiment would give them a chance to draw for NTD500 Uni-President gift certificates. That said, few

participants were willing to make a special trip for the main experiment. Attempts to recruit online via postings on popular forums (i.e. PTT) were also to no avail, leading to our subsequent trips to other different school campuses to recruit for participants and managing barely enough participants for each experiment.

Questionnaire Design

The questionnaires that were done on computer programmes were one of a new method, keeping many participants excited and intrigued during the entire course of the study. One shortfall of the questionnaire design was, however, the repetition of the Sudoku game in the final experiment, which many participants completed half-heartedly. Though the Sudoku games served as an interruption of concentration between sections, it would require a higher level of thinking skills to complete, which was unexpected by the participants in a questionnaire. Most participants were not pleased with the repetition of the Sudoku games, and tend to fill in the blanks with random numbers after expressing their displeasure. Enthusiasm was noted to have reduced, though they were on to their final few questions by then.

Suggestions

The use of the computer programme proved to be a benefitting one, though the programme could be modified to suit a wider variety of computers; the files could be sent to individual participants and returned upon completion, increasing the convenience of participants. Alternatively, higher incentives could be given to increase the efforts they are willing to make for the study. In example, instead of a lucky draw chance, a guaranteed gift for every participant who completes the study would be more fruitful.

Research Contributions and Practical Implications

In the present study, we attempted to apply and extend the Dimensional Range Overlap Model (Chien et al., 2010) to conditions of multiple primes. By providing a more complete scenario to illustrate the underlying factor of multiple contexts, we hope to offer some practical consumer insights to the marketing and management field.

The current research realistically takes into consideration the countless of similar products consumers encounter with, and make their evaluations and judgments from every day. Though derived from the DROM, both researches differ with a crucial element; the DROM was experimented based on a single prime and its corresponding effect on the target, whilst the current research recognised the roles of multiple primes. Nonetheless, the crux of the model, the existence of an overlap or non-overlap, would determine the movement of perceptual judgment. By having a deeper understanding of how consumers form their evaluations and apply to the different scenarios and environmental settings, a marketer can strategize and manipulate contextual information to influence consumers' perception towards a given product.

In example, marketers selling cars can choose who and what to put in their advertisements, be it a well-known celebrity endorsing the product, or arranging for the advertisements to be placed after that of a prestigious brand (i.e. Mercedes Benz). Alternatively, marketers can also influence consumer perceptions in creating a favourable external contextual environment setting, by placing its brand of cars amongst more prestigious ones, or hold joint events with other highly acclaimed product brands.

Future Research

Despite the lack of confirmation in some of the hypotheses of our current research, we do note the overall shift tendencies were supportive of our general assumptions, and thereby believe that they are worthy of further exploration and research. The greatest limitation in our main experiment was in its procedure. Where the length and design of the questionnaire, as well as execution and environmental settings of the study were expressly positive, the recruitment of participants posed an unexpected challenge. As we had to recruit a considerable number of participants to come forth at a specified time and venue, participant reluctance was apparent, given the lack of incentive and motivation. Further setbacks were met when we had to recruit our study participants within a limited time, especially in the period where schools were starting to dismiss students for summer break. If this issued is rectified, the experiment may potentially be a successful one.

In our final dual-primes condition experiment, we note that both Prime 2 and target had general movements according to what was hypothesised, but Prime 1 had an entirely unexpected assimilation move, significantly contradicting our assumptions. One reason proposed could be that the attitude certainty on the lower bound of Prime 1, in which overlapped with target, was so strong at the particular bound that instead of a contrast, as predicted, with the other prime in which it had no overlap with, it moved together with the target in which it had a strong overlap with. Researchers can examine for the factor of attitude certainty on one or both bounds of each prime and target evaluated.

Another area worth investigating would be the degree of symmetry in simultaneous shifts between two context ranges (Reciprocity Hypothesis, Hsiao 2002). While the Reciprocity Hypothesis proved simultaneous shifts between two context ranges, it did not address the issue on whether both corresponding shifts would be congruent. Therefore,

another reason why Prime 1 could have assimilated with target instead, was possibly because its post-context effect with Prime 2 had resulted in a lesser than expected repel from Prime 2, thereby retaining an overlap with target, albeit a smaller one, after it supposedly contrasted. Subsequent shifts would then see all three overlapped target and contexts ranges assimilating closer to each other, though target would ultimately end up higher up the scale, given the larger initially overlap range with Prime 2 manipulated. This assumption of incongruent shifts could possibly occur singly, or in conjunction with attitude certainty. Future research may likely include and investigate the role and influences of these suggested factors.

Last but not least, valence effect is not verified in the present research; we cannot determine if a prime placed to overlap with the target on its negative valence would result in a different contextual effect than a similar prime manipulated to overlap on the positive valence of the target. Therefore unlike in the current research, future research may consider a symmetrical setup for a more accurate examination, with the degree of overlap kept constant on both valence of the target.

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