



LBS Research Online

[Svetlana Kirillova](#)

Revision of cognitive structure of the parent brand in response to brand extensions: the role of algebraic and thoughtful piecemeal processing

Thesis

This version is available in the LBS Research Online repository: <https://lbsresearch.london.edu/id/eprint/2380/>

[Kirillova, Svetlana](#)

(2002)

Revision of cognitive structure of the parent brand in response to brand extensions: the role of algebraic and thoughtful piecemeal processing.

Doctoral thesis, University of London: London Business School.

DOI: <https://doi.org/10.35065/EQWS8297>

Users may download and/or print one copy of any article(s) in LBS Research Online for purposes of research and/or private study. Further distribution of the material, or use for any commercial gain, is not permitted.

**REVISION OF COGNITIVE STRUCTURE OF THE PARENT
BRAND IN RESPONSE TO BRAND EXTENSIONS:
The Role of Algebraic and Thoughtful Piecemeal Processing**

Svetlana Kirillova

**Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy**

LONDON BUSINESS SCHOOL

February 10, 2001



ACKNOWLEDGEMENTS

I am enormously grateful to my advisor Professor Kent Grayson for his support in developing the theoretical foundations of this thesis and my overall professional development. He taught me the very important lessons about what represents rigorous, theory-driven research, and showed me how much work and courage it requires to become a researcher. I consider myself lucky to have had the opportunity to work with him. His intellectual rigor and thorough approach to analysis will always inspire my work.

I am very grateful to London Business School faculty members Bruce Hardie, Pino Audio, Paddy Barwise, Arvind Sahay and Bill Putsis who kindly provided advice on the earlier drafts and presentations of this thesis.

The Ph.D. Programme at London Business School provides an extremely supportive environment. I am grateful to my friends and colleagues Inkyung Chung, Emilio Foxell, Debra Riley and Chun-Yao Huang, who all provided their comments on this research.

I have also benefited enormously from discussing research ideas with the broader academic community through conferences and seminars, and more informally by e-mail and in person. I am grateful to Alice Tybout, Mita Sujan and Debra Roedder John for their advice at the earlier stages of the theoretical development of this research, and I am equally grateful to INSEAD Ph.D. students for their comments on my presentations at INSEAD/LBS conferences.

I wish to thank The Center for Marketing for providing funding for this study. I would also like to thank Celine Gilg, Fructis brand manager, who kindly commented on the experimental stimuli design and supported the study.

Finally, I am very grateful to my husband Artem for his understanding, emotional support and encouragement during my work on this dissertation. I hope he enjoys the sense of completion as much as I do.

ABSTRACT

Companies frequently seek to increase market share and/or profit by developing brand extensions that relate to an existing parent brand. However sometimes these brand extensions are different in some ways from the parent and therefore present information that is incongruent with consumers' existing impressions of the brand, which can therefore change consumers' perceptions of the parent brand. Previous research on brand knowledge changes has considered two alternative models of brand knowledge changes: typicality-based and bookkeeping. These two models lead to opposite predictions regarding the pattern of brand knowledge changes in response to incongruent information presented by the brand extension. The bookkeeping model predicts that more incongruent information causes more changes to the parent, whereas the typicality-based model suggests that less incongruent information causes more changes. However, empirical tests of these theories have not shown conclusively which model is best: some studies support one model, while other studies support the other.

The purpose of this dissertation is to reconcile these previous findings by suggesting that different models are likely to be correct depending on the type of cognitive processing undertaken by the consumer. This dissertation also notes that different researchers have used different operationalizations of incongruity and explores the effects of these differences by using multiple operationalizations in the same study. Lastly, this dissertation examines the differential sensitivity of two different ways of capturing brand knowledge changes: the strength of associations and the overall attitude towards the brand.

The findings suggest that algebraic piecemeal processing (which focuses on the extension's information on its own) leads to a bookkeeping-based pattern of brand knowledge changes. In contrast, thoughtful piecemeal processing, (which focuses on the extension in its relation to the parent brand) leads to a typicality-based pattern of brand knowledge changes. This pattern is shown to be true regardless of the operationalization of incongruity. Furthermore, the different measures are found to be differentially sensitive to certain brand knowledge changes. Therefore, the previously conflicting results can indeed be accounted for by different types of processing, as well as by different measures of brand knowledge changes.

TABLE OF CONTENTS

LIST OF FIGURES	6
LIST OF TABLES	7
1. INTRODUCTION	8
2. LITERATURE REVIEW	12
2.1 The Cognitive Structure of Brand Knowledge:	13
variables capturing changes; incongruity between the brand and extension	13
2.1.1 Brand as an Associative Semantic Network.....	15
2.1.2 Brand as a Category	19
2.1.3 Brand as a Schema	27
2.1.4 Summary of Different Perspectives on Brand Knowledge Structure.....	33
2.2 The Mechanism of Brand Knowledge Changes in Response to Incongruent	
Information: Competing Theoretical Predictions and Conflicting Empirical Evidence	41
2.2.1 Competing Theoretical Perspectives on Brand Knowledge Changes	43
2.2.2 Conflicting Empirical Evidence	60
2.3 Overall Assessment of the Brand Knowledge Changes in Response to Incongruent	
Information Literature	74
3. FRAMEWORK, PROPOSITIONS AND HYPOTHESES	77
3.1 The Effect of Information Processing on the Pattern of Brand Knowledge Changes	80
3.2 Priming Extension's Similarities with the Parent Brand versus Differences from the	
Parent Brand as a Factor Moderating Processing of Extension's Information	90
3.3 Operationalizations of Extension's Incongruity and Measures of Brand Knowledge	
Changes	102
4. METHODOLOGY	109
4.1 Stimuli Development and Baseline Structure of Associations Measurements	110
4.2 Overview	118
4.3 Dependent Measures	120
4.4 Sample and Procedure	123
5. DATA ANALYSIS	125
5.1 Manipulation check: Perceptions of Extension's Incongruity by Condition	125
5.2 Results	133
5.2.1 The Effect of Priming on the Extension Information Processing	134
5.2.2 Priming Effect on the Pattern of Brand Knowledge Changes: testing for the models	
of brand knowledge changes under different conditions.....	146
5.2.2.1 <i>Overall Main Effects of the Operationalizations of Incongruity,</i>	
<i>Priming Conditions and an Interaction Effect between</i>	
<i>Operationalization of Incongruity and Priming Conditions</i>	<i>147</i>
5.2.2.2 <i>Differences Primed Condition: testing for</i>	
<i>"bookkeeping" pattern of changes.....</i>	<i>153</i>

5.2.2.3 Similarities Primed Condition: testing for “typicality-based” pattern of changes	160
5.2.2.4 Extension’s Incongruity - Condition Interaction Effect	167
5.2.2.5 Conditions Main Effect – Similarities versus Differences Primed Conditions	170
6. DISCUSSION	176
6.1 Summary of Findings	177
6.1.1 The Priming Effect on the Extension’s Information Processing	178
6.1.2 The Priming Effect on the Brand Knowledge Changes	181
6.1.2.1 Differences Primed Conditions: testing for bookkeeping pattern of brand knowledge changes	181
6.1.2.2 Similarities Primed Conditions: testing for typicality-based pattern of brand knowledge changes.....	183
6.1.2.3 Similarities and Differences Priming Conditions: interactions with extension’s incongruity and main effects	184
6.2 Implications of Findings	187
6.3 Limitations and Future Research Directions	191
6.4 Conclusion	194
REFERENCES	196
APPENDIX 1: Fructis Advertisement	204
APPENDIX 2: Pretest 2 – Fructis Associations Measures – Control Group	205
APPENDIX 3.1: Questionnaire: Similarities Primed Conditions	206
APPENDIX 3.2: Questionnaire: Differences Primed Conditions	211
APPENDIX 4: Differences Primed Conditions - Changes in the Associations’ Strength	212
APPENDIX 5: Differences Primed Conditions -Changes in the Overall Attitude	213
APPENDIX 6: Similarities Primed Conditions - Changes in the Associations’ Strength	214
APPENDIX 7: Similarities Primed Conditions -Changes in the Overall Attitude	215
APPENDIX 8: Scales Correlations and Factor Loadings	216
APPENDIX 9.1: Differences Primed Condition – Analysis by Factor	217
APPENDIX 9.2: Similarities Primed Conditions – Analysis by Factor	218
APPENDIX 10.1: Analysis of Interaction Effects (Dependent measure – changes in associations’ strength)	219
APPENDIX 10.2: Analysis of Interaction Effects (Dependent measure – changes in the overall attitude)	220
APPENDIX 11.1: Analysis of Interaction Effects by Factors - Benefits Factor	221
APPENDIX 11.2: Analysis of Interaction Effects by Factors – Science and Technology Factor	222
APPENDIX 11.3: Analysis of Interaction Effects by Factors – Trustworthy Image Factor	223
APPENDIX 12: Conditions Effects by Factor: Similarities versus Differences Priming Conditions	224

LIST OF FIGURES

Figure 1: Operationalization of Incongruity as the Distance Between Product Categories	25
Figure 2: Neutrogena Extensions	44
Figure 3: Subtyping Process	55
Figure 4: Relational, Thoughtful Piecemeal and Category-based Processing	58
Figure 5: Framework Overview	77
Figure 6: Brand Knowledge Changes in Response to Alternative Types of Incongruent Extension's Information Processing (Loken and Roedder John 1993 versus Gurhan Canli and Maheswaran 1998)	86
Figure 7: Brand Knowledge Changes in Response to Alternative Types of Incongruent Extension's Information Processing	87
Figure 8: Predicted Patterns of Brand Knowledge Changes	97
Figure 9: Possible Relationships Between the Patterns of Brand Knowledge Changes under Different Conditions	98
Figure 10: Expected Relationships Between the Patterns of Brand Knowledge Changes under Different Conditions	100
Figure 11: Fructis' Brand Extensions: Hierarchy of Categories	114
Figure 12: Extensions' Incongruity Evaluation	127
Figure 13: Types of Thoughts Generated Under Different Priming Conditions	136
Figure 14: Differences Primed Conditions: Changes in Associations' Strength and Attitude	154
Figure 15: Similarities Primed Conditions: Changes in Associations' Strength and Attitude	161
Figure 16: Main Conditions Effect: Differences versus Similarities Primed Conditions - Associations and Overall Attitude Changes	171

LIST OF TABLES

Table 1: Approaches Used to Model the Structure of Brand Knowledge	13
Table 2: Examples of Taxonomies Used in Basic Object Research	20
Table 3: Measures Capturing Changes in the Cognitive Brand Structure	33
Table 4: Operationalizations of Incongruity	36
Table 5: Examples of Alternative Types of Incongruity Operationalization	39
Table 6: Summary of Cognitive Principles and Models of Cognitive Brand Structure Changes	44
Table 7: Conflicting Empirical Evidence: “Bookkeeping Theory” Perspective	61
Table 8: Conflicting Empirical Evidence: The “Typicality-based Theory” Perspective	65
Table 9: Conditions Facilitating Different Types of Processing of Extension’s Information and Moderating the Results Supporting Alternative Perspectives of Brand Knowledge Changes	73
Table 10: Alternative Operationalizations of Incongruity and Measures of Brand Knowledge Changes	103
Table 11: Stimuli Development: T Statistics	116
Table 12: Stimuli Selected: Extension’s Incongruity Operationalizations	116
Table 13: Experimental Design	119
Table 14: Dependent Measures of Cognitive Brand Structure Changes	122
Table 15: Evaluation of Extensions’ Incongruity with the Parent Brand	130
Table 16: Differences Primed Conditions: An Extension’s-Based versus Parent Brand Based Thoughts	138
Table 17: Similarities versus Differences Primed Conditions Extension-Related Thoughts	139
Table 18: Similarities versus Differences Primed Conditions Thoughts Considering the Relationships between the Brand and the Extension	140
Table 19: Similarities Primed versus Differences Primed Conditions Simple Evaluative Thoughts	141
Table 20: Similarities versus Differences Primed Conditions Category-based Thoughts	142
Table 21: Similarities versus Differences Primed Conditions Evaluative and Category- Based Thoughts	143
Table 22: Summary of the Results for the Hypotheses Regarding the Types of Information Processing	144
Table 23: Incongruity Operationalized as Number of Incongruent Attributes	149
Table 24: Incongruity Operationalized as Degree of Incongruent Attributes	150
Table 25: Incongruity Operationalized as Category Distance	151
Table 26: Differences Primed Condition - Main Effects – Pattern of Brand Knowledge Changes	158
Table 27: Similarity Primed Condition - Main Effects – Pattern of Brand Knowledge Changes	164
Table 28: Summary of Interaction Effects	168
Table 29: Main Conditions Effects	173
Table 30: Summary of the Results for the Hypotheses on the Brand Knowledge Changes	175

1. INTRODUCTION

Brand extensions are a popular strategy for firms launching new products in the marketplace. The attraction of leveraging the brand name via extensions is powerful. For example, using an established brand name can substantially reduce the initial investment in an extension and increase the probability of success. However, when considering an extension strategy, it is necessary to realize that brand extensions not only benefit from the existing parent brand, but can also change consumer's perceptions of the parent brand. A brand extension can reinforce the desirable brand associations, but can also convey information that is incongruent with the parent and therefore diminish the value of the brand.

For example, when Sunkist, a brand strongly associated with oranges, good health and vitality, introduced Sunkist Vitamin C tablets, it reinforced valuable existing associations. This is because Sunkist Vitamin C tablets are strongly associated with health and vitality. However, another extension, Sunkist Fruit Rolls (a candy) might hurt the Sunkist health associations. A candy might be perceived as not that healthy, and thus incongruent with Sunkist's health associations. Thus, a key consideration when developing and launching a brand extension should be the possible effects of the extension on consumers' perceptions of the parent brand. In Aaker's (1990, p.47) words,

Because the extension can dramatically affect a key strategic asset, both in its original setting and in the new context, the wrong extension decision can be strategically damaging.

Despite the importance of understanding the impact of brand extensions on the parent, most previous research has focused on how consumers evaluate the extension in relation to the parent rather than the parent in relation to the extension (Aaker and Keller

1990; Chakravarti, MacInnis and Nakamoto 1990, Minnesota Consumer Behavior Seminar 1987; Park, Jaworski, McInnis 1986; Park, Milberg and Lawson 1991; Reddy, Holak and Bhat 1994; Tauber 1981). Historically, brand knowledge has been considered as a factor moderating extension evaluation (Boush and Loken 1991; Broniarczyk and Alba 1994; Dacin and Smith 1994), and less attention has been paid to the parent brand changes in response to extensions. Recently some researchers have indeed shifted from focusing on brand extensions to focusing on brand extensions' effects on their parent brands (Ahluwalia and Gurhan-Canli 2000, Gurhan-Canli and Maheswaran 1998; Loken and Roedder John 1993; Park, McCarthy and Milberg 1993; Roedder John, Loken and Joiner 1998; Romeo 1991; Sullivan, 1990). However, a major problem with understanding the collective impact of these studies is that they have each used different measures of brand knowledge and different conceptualizations of the incongruity between the brand and its extension. This makes it difficult to compare results. Moreover, these studies have provided conflicting empirical evidence regarding what level of incongruity between the extension and its brand facilitates changes in response to the extension. It is not clear whether the extension's effect on the brand structure is stronger when the extension is more similar or less similar to the brand. A more distant extension might cause more changes because it provides the consumer with more information that is incongruent with parent brand. On the other hand, a less distant extension might cause more changes because it is more representative of the brand, and thus carries information that is more relevant to the brand than distant extensions do. For example, Neutrogena, a brand strongly associated with gentleness and high quality might launch two extensions: one is low on gentleness and another is low on gentleness and quality. Which of these extensions will cause more changes? The extension

that is low on gentleness might only cause more changes because it is more typical of the brand, whereas the extension that is low on gentleness and quality might cause more changes because it carries more information incongruent with the parent brand.

In addition, previous researchers have also reported opposite findings regarding the conditions under which one or the other result is expected. For example, Loken and Roedder John (1993) found that less incongruent extensions caused more changes than more incongruent extensions did when consumers were encouraged to elaborate on the brand extension's typicality. In contrast, Gurhan-Canli and Maheswaran (1998) found the same effect when consumers were not given the encouragement to elaborate. Thus, there is no clarity about the conditions under which one or the other result is expected.

This dissertation is motivated by the need to understand the mechanism of brand knowledge changes in response to incongruent information presented by extensions. Its purpose is to extend the emerging literature by developing and testing a framework that integrates competing theoretical views and reconciles conflicting empirical evidence. In addition, it aims to contribute to an understanding of brand knowledge structural variables that are susceptible to changes in response to incongruent information, and of alternative ways in which incongruity between the brand and its extension can be operationalized.

More specifically, the aim of this research is to clarify the conditions under which different levels of information incongruity between the parent brand and extension will

facilitate structural brand knowledge changes. The central argument developed is that conflicting evidence from previous studies can be reconciled if one allows for:

- 1) The effect of alternative types of incongruent information processing;
- 2) The influence of different types of incongruity between the parent brand and brand extension;
- 3) The effect of the measures used to capture the brand knowledge.

Each of these propositions is addressed and explained more fully in the body of this dissertation.

2. LITERATURE REVIEW

The purpose of Chapter 2 is to review the issues and research related to brand knowledge changes in response to incongruent information. It will also summarize the limitations of previous studies, and provide background theoretical information that will help to address these limitations. It is structured in the following way: Section 1 considers alternative models of brand knowledge and different measures of brand knowledge changes proposed by each model. It also analyzes the different ways in which incongruity between the brand and extension can be operationalized. Section 2 describes two alternative perspectives on how brand knowledge changes in response to incongruent information and empirical studies supporting each of these perspectives. Section 3 provides an overall assessment of the literature.

**2.1 The Cognitive Structure of Brand Knowledge:
variables capturing changes; incongruity between the brand and extension**

The goal of this dissertation is to reconcile competing theoretical predictions and conflicting empirical evidence regarding the complex issue of brand knowledge changes in response to an increasing magnitude of information incongruity presented by brand extensions. Reconciling previous research requires answering three questions:

- 1) What is the cognitive structure of brand knowledge?
- 2) What changes might occur to this structure when incongruent information is incorporated?
- 3) To what extent and in what way is the new information incongruous with existing knowledge?

The answers to the second and the third questions are more directly related to the goal of this dissertation, but it is impossible to begin answering them without answering the first question. This chapter considers three alternative approaches to modelling the cognitive structure of brand knowledge: the associative network approach (Keller, 1993), the categorization approach (Loken and Ward 1990; Park, Lawson, and Milberg, 1989; Sujan and Dekleva 1987), and the schematic approach (Crocker 1984; Meyers-Levy and Tybout 1989). A list of research using each of these approaches is presented in Table 1.

Table 1: Approaches Used to Model the Structure of Brand Knowledge

	Associative Network	Categorization	Schematic
Studies	Quillian (1966) Collins and Loftus, 1975 Anderson, 1983 Keller 1993 Farquhar and Herr 1993	Rosch, 1973;1978 Rosch and Mervis, 1975 Mervis and Rosch, 1981 Barsalou, 1983;1985 Sujan, Dekleva, 1987; Park, Lawson and Milberg 1989; Loken and Ward 1990	Meyers-Levy and Tybout, 1989 Crocker 1984 Crocker, Fiske, and Taylor 1984 Rumelhart and Norman 1978

Because each model offers a different view of the cognitive structure of brand knowledge, each proposes its own list of variables that might change in response to incongruent information, and its own set of dimensions along which incongruity between the brand and extension should be conceptualized. Rather than arguing that one model is superior to the others, this dissertation argues that each of the models emphasizes different aspects of brand knowledge development and performance. As a result, I will draw upon all three models when examining the ways in which a brand extension can affect a consumer's knowledge structure regarding the brand.

Broadly speaking, brand knowledge has been defined in terms of two components: brand awareness and brand image. Brand awareness relates to brand recall and recognition by consumers. Brand image refers to the set of associations linked to the brand that consumers hold in memory (Keller 1993, p.2). While brand awareness is certainly essential to the success of a brand, this dissertation focuses on the cognitive structure of brand knowledge – that is, what associations people make with a brand once they are aware of it. This cognitive structure has been viewed as a “brand image” component of brand knowledge (Roedder John, Loken and Joiner 1988).

The next three sub-sections consider each of the three approaches to model brand knowledge and summarize the different measures of brand knowledge changes and operationalizations of extension incongruity.

2.1.1 Brand as an Associative Semantic Network

Studies of brand knowledge as an associative semantic memory network are based on Anderson (1983), Collins and Loftus (1975) and Quillian (1966). This model views cognitive structure as a set of nodes and links. Nodes store information, and are connected by links (associations) that vary in strength. Semantic memory operates due to a “spreading activation” process (Collins and Loftus 1975). A node becomes a potential source of activation for other nodes, either when external information is being encoded or when internal information is retrieved from long-term memory. Activation can spread from this node to other linked nodes in memory. When the activation of another node exceeds some threshold level, the information contained in that node is recalled. Thus, the strength of association between the activated node and all linked nodes determines the extent of this “spreading activation” and the particular information that can be retrieved from the memory.

Consistent with an associative network memory model, Keller (1993) conceptualizes brand knowledge as consisting of a brand node in the memory to which a variety of associations are linked. For example, when considering a soft drink purchase, a consumer may think of Pepsi because of its strong association with the soft drink product category. Consumer knowledge most strongly linked to Pepsi should also then come to mind, such as perceptions of its taste, sugar and caffeine content, or even recalled images from advertising campaigns or past product experiences.

In his further conceptualization of brand knowledge, Keller (1993) adjusts Anderson's model to make it more convenient for the analysis of consumer responses to brands. Keller (1993) focuses his attention on those characteristics of brand associations that are most important in determining different consumer response to brands. These characteristics are: favorability, strength, and uniqueness. In addition, Keller introduces a hierarchical classification of the types of brand associations in order to support the idea that brand attitude is the most global association, which incorporates all other associations.

According to Keller's conceptualization, brand associations differ by their level of abstraction - that is, by how much information is summarized or subsumed by the association. Along this dimension, they can be classified into three major categories of increasing scope: attributes, benefits and attitudes. Attributes are those descriptive features that characterize a product or service. For example, consumers might think that Pepsi is sweet and cold. Benefits are the personal values that consumers attach to the attribute of the product or service - that is, what consumers think the product or service can do for them. For example, a consumer might choose Pepsi because it makes him "feel young and active." Brand attitudes are defined as consumers' overall evaluations of a brand. For example, a consumer might like Pepsi overall and feel that it is a good product. A widely accepted approach to measuring attitudes is based on a multiattribute formulation in which brand attitudes are a function of the associated attributes and benefits that are salient of the brand (Fishbein and Ajzen 1975; Ajzen and Fishbein 1980). For example, a consumer's attitude toward Pepsi might be a summary evaluation of how sweet and cold it is, plus how

young and active it makes the consumer feel. According to Keller's conceptualization, attitudes are the most comprehensive aggregated structural variable of brand knowledge.

What brand knowledge changes might occur in response to incongruent information?

Based on the associative network model, the following changes in brand knowledge structure might occur in response to a brand extension:

- 1) the strength of attributes and benefits associated with the brand node;
- 2) the favorability of the overall attitude towards the brand.

According to this model, changes in attributes and benefits should be reflected in changes in the overall attitude towards the brand, and this global measure is widely used to capture the changes in brand knowledge structure in response to new information presented by an extension (Aaker and Keller 1992; Park, McCarthy, and Milberg 1993; Park, Milberg, and Lawson 1991; Romeo 1991).

Operationalizations of incongruity between an extension and its brand

Based on the associative network model, incongruity between the extension and its parent brand can be operationalized along the attributes and benefits dimensions. For example, the brand can launch an extension that is inconsistent with the price attribute (Gucci launching low price bags), or it can launch an extension inconsistent with the benefit (Gucci, a brand with symbolic benefits, launching durable allweather shoes, an extension that has a functional benefit).

To summarize, the associative network model of brand knowledge encourages a focus on changes in the brand's attributes, beliefs, and overall attitude. These depend on the favorability of specific brand associations. The incongruity between the brand and its extension can be operationalized along two dimensions of brand structure: attributes and benefits.

2.1.2 Brand as a Category

Studies of brand knowledge as a category are based on the principles of categorization developed for two types of categories: natural (“taxonomic”) and *ad hoc* (“goal-derived”) categories (Barsalou 1983; 1985; Mervis and Rosch 1981; Rosch 1973, 1978; Rosch and Mervis 1975; Tversky 1977).

Taxonomic categories are those commonly used by members of a culture to classify phenomena based on their physical characteristics. Goal-derived categories, such as “things to take from one’s home during a fire”, are created *ad hoc* from items related to goal achievement. Brands are shown to have characteristics of both taxonomic and goal-derived categories (Loken and Ward 1990; Park, Lawson, and Milberg 1989).

One fundamental premise of the categorization approach is that objects can be grouped based on their perceived similarity at varying levels of specificity. Rosch (1978, p.30) defines a category as “a number of objects considered equivalent”. Studies of taxonomic categories suggested that the new members be assigned to categories based on the similar or shared features between the new category member and other members of the category. These studies have also developed an understanding of the structural aspects of the brand, introducing the concepts of hierarchical and graded structure of the category (Rosch 1978; Rosch, Mervis, Gray, Johnson, Boyes-Braem 1976; Rosch and Mervis 1975).

Understanding the hierarchical structure of categories allows researchers to explain the relationships among different categories. Lower-level categories share features with

their higher level categories, plus have specific additional features, which make them more specific than higher level categories. The most abstract (or “superordinate”) categories include several lower level categories (basic level categories), which in turn include several lowest level (or “subordinate”) categories. Members of superordinate categories are distinguished from one another by some key attributes, but they share a few key features. For example, furniture is a superordinate category. It includes chairs, tables, and lamps, objects different from one another on some key attributes but which are all types of furniture. Chairs, tables and lamps are examples of basic categories. They are called “basic” because their attributes are thought to provide the greatest discrimination between categories and because they tend to be most frequently used to categorize both natural and social objects. For example members of the “chair” category are characterized by common key attributes (chairs are for sitting on, chairs tend to have four legs, etc.). The lowest level of the hierarchy of categories is the level of subordinate categories characterized by the small number of features that discriminate objects within the category and a large number of features shared by the objects within the category. For example, all chairs (basic level category) are similar on some key attributes, but a kitchen chair (subordinate level category) might be discriminated from a living room chair. Table 2 provides examples of hierarchical category structure (Rosch 1978, p.32).

Table 2: Examples of Taxonomies Used in Basic Object Research

Superordinate	<i>Basic Level</i>	<i>Subordinate</i>
Furniture	Chair	Kitchen Chair
		Living room chair
	Table	Kitchen table
		Dining room table
	Lamp	Floor lamp
		Desk lamp

In addition to the concept of the hierarchical structure of categories, Rosch (1978) introduced another important concept - graded category structure. The graded structure of the category reflects the fact that some members of the category are more representative of this category than other members are. For example, a robin is more representative of the “bird” category than a penguin is because a robin shares more features with other members of this category. Prototypes are the clearest cases of category membership defined operationally by people’s judgment of goodness of membership in the category. Rosch and Mervis (1975) show that the prototypical members of the category share more attributes with other members of the category. Thus, studies of the natural categories conducted by Rosch and colleagues suggested that new members are included in the categories based on the features of similarity, and developed the two concepts explained in the previous paragraphs (i.e. the hierarchical and graded structure of category).

The studies of goal-derived categories pioneered by Barsalou (1983; 1985) suggest that, in contrast to taxonomic categories, the members of goal-derived categories do not necessarily need to have similar features. Goal-derived categories are formed around a specific goal. Each member of the category is included in the category because it satisfies the goal for which the category is formed. For instance, the category “things to take from home during a fire” might include paintings, document files, jewelry, and/or some items that have emotional value. Each item is included in the category based on its ability to contribute to goal achievement (which might be to minimize loss). Items vary by their ability to contribute to goal achievement. Paintings might be more important for some people, whilst manuscripts are for others.

The structure of goal-derived categories is governed by ideal concept consistency (the extent to which each member of the category contributes to the achievement of the goal around which the category is formed). Concept consistency is a characteristic similar to the attribute (graded) structure of the taxonomic categories. It reflects how representative the member is in relation to the category.

The studies of taxonomic and goal-derived categories shed light on the principles of categorization and structural aspects of the categories. New members are assigned to taxonomic categories based on their feature similarity with other category members. In contrast, new members are assigned to goal-derived categories based on their consistency with the ideal concept around which the category is formed. Both taxonomic and goal-derived categories have graded structure: some members represent the category better than the others do, and both are organized in the hierarchies.

Categorization research was applied to studies of brands by Meyers-Levy and Tybout (1989), Park, Lawson, and Milberg (1989), Loken and Ward (1990), Roedder John, Loken and Joiner (1998); and Sujan and Dekleva (1987), among others.

Sujan and Dekleva (1987) use Rosch's tests determining the hierarchical structure of the categories to examine product class, product type, and brands. Meyers-Levy and Tybout (1989) use Rosch's categorization principles to operationalize incongruity between the brand and extension. Roedder John, Loken and Joiner (1998) show that consumers perceive Johnson and Johnson baby shampoo as a prototypical product for the entire brand.

Park, Lawson, and Milberg (1989) and Loken and Ward (1990) directly investigate the application of categorization principles to brands and product categories. Park, Lawson, and Milberg (1989) study the difference in the memory structure of brand names for functional, symbolic, and usage-based brand concepts. They conclude that the products of functional and usage-based brands are categorized based on a feature similarity principle, and thus are similar to taxonomic categories. In contrast, products of symbolic brands are categorized based on the principle of concept consistency (for example, luxury). Gucci, for example, produces diverse product types, such as shoes, watches, and bags, but they are grouped together based on their ability to satisfy/express the need for luxury. Thus, symbolic brands are similar to goal-derived categories.

Loken and Ward (1990) provide another good example of consumer behavior research conducted to verify the applicability of categorization principles to a brand/product category context. Their findings suggest that product categories have both goal-derived and taxonomic properties, since both goal-derived measures (ideals and attribute structure) and taxonomic measures (feature similarity) significantly predicted typicality across all product categories.

Taken together, these findings illustrate that principles of categorization are applicable to brands. Some brands are structured taxonomically (functional brands, such as Sony, for example), while others are structured according to goal-derived categories (symbolic brands, such as Gucci, for example). The structural variables advanced by

categorization theory can be used for the analysis of brand knowledge changes and for operationalizing incongruity between the brand and its extension.

What brand knowledge changes might occur in response to incongruent information?

Considering a brand as a category provides sound guidelines for measuring brand knowledge changes. According to this perspective the variables that can be used to capture brand knowledge changes are:

- feature similarity - the degree to which two products' features are similar;
- ideal concept (attribute structure) consistency – the degree to which the product has salient attributes related to the goals or uses of the brand.

Operationalizations of incongruity

Based on categorization theory, incongruity between an extension and its parent brand can be operationalized in three ways:

- feature incongruity;
- concept (attribute structure) incongruity;
- incongruity along the distance between the categories in the hierarchy of categories.

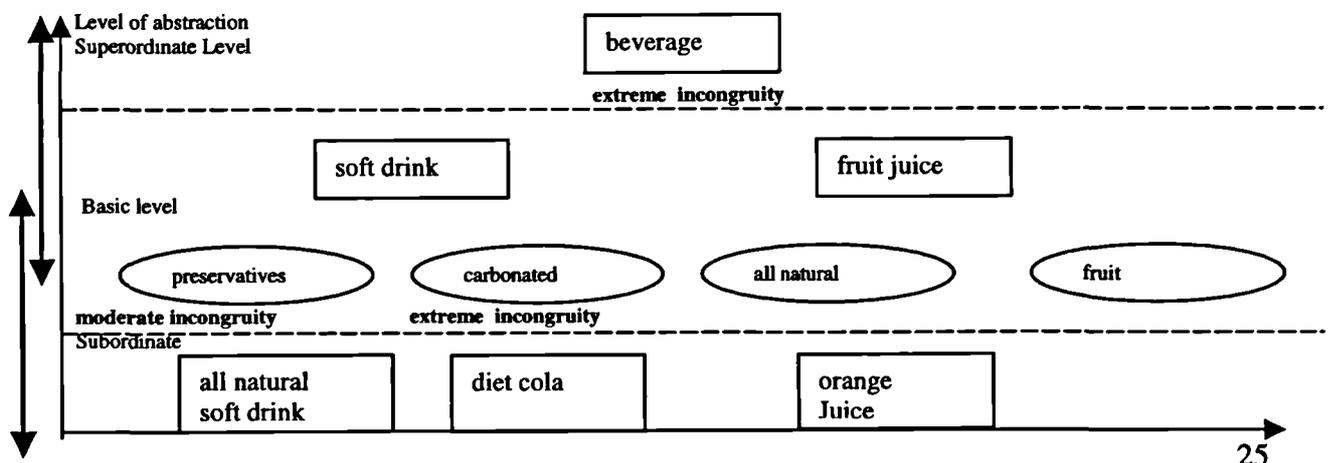
An example of a *feature* operationalization of incongruity is provided by Loken and Roedder John (1993). Imagine that Neutrogena, a brand strongly associated with gentleness, launches a new extension that is low on gentleness. In this case the extension is incongruent to its parent brand on the feature of gentleness.

An example of *attribute* structure incongruity is used in Roedder John, Loken and Joiner (1998). Johnson and Johnson is a brand strongly associated with gentleness and

hygiene. Gentleness is more strongly associated with Johnson and Johnson than hygiene is. Consider two new Johnson and Johnson's products: one is low on gentleness and another is low on hygiene. The extension that is low on hygiene is less incongruent than an extension that is low on gentleness because gentleness is more strongly associated with the parent brand.

Meyers-Levy and Tybout (1989) use an example of incongruity along the distance between the categories in the *hierarchy of categories*. They propose that degree of incongruity can be defined by the ease with which an incongruity can be addressed within the activated hierarchical structure. Moderate incongruities can be resolved by moving to the next lower level of hierarchical structure, because this level is linked directly to the activated category and accessible with only moderate effort. To illustrate these different types of incongruity consider Figure 1, which presents a hierarchical structure of brand knowledge. A structural incongruity with the beverage category might be, a beverage description including attributes not represented in the beverage category, such as preservatives. This incongruity could be resolved by activating an alternative category at the next lower basic level (e.g. soft drink), so it is a moderate incongruity.

Figure 1: Operationalization of Incongruity as the Distance Between Product Categories



More incongruent extensions are those that have the features of the categories that are the same level or above. The incongruity of more extremely incongruent extensions can not be resolved by invoking a schema at the next lower level in the hierarchy. Instead, they require a more complex strategy. For example, a beverage description that included carbonated and all natural would fit neither the soft drink nor the fruit juice basic level category schema. This more extreme incongruity might be resolved by moving down multiple levels. The resolution of such an incongruity is made effortful by the absence of a match at the level immediately below the activated category. Thus, categorization theory provides several possible operationalizations of incongruity between an extension and its brand: feature incongruity, concept (attribute structure) incongruity, and incongruity along the category distance.

To summarize, in addition to the hierarchical description of brand associations developed by the associative network theory, categorization theory provides some insights regarding the principles of grouping specific associations and the structural organization of the brands. It suggests a feature similarity categorization principle for functional brands, and concept consistency principle for symbolic brands. It also emphasizes two structural aspects of the brands as categories: the hierarchical and the graded dimensions.

The next section addresses schema theory perspective on the brand knowledge changes.

2.1.3 Brand as a Schema

In contrast to the associative network and categorization theory approaches, schema theory is concerned primarily with the application of prior knowledge to the understanding of new information. It encourages a focus on changes in all of the structural variables advanced by the associative network and categorization approaches, and proposes some additional types of measures of changes. In addition to possible dimensions of incongruity between the brand and extension considered by categorization theory, schema theory suggests that incongruity can be operationalized along the constraint values of the schema variables.

While categorization theory describes how we classify and identify individual instances as members of larger familiar groupings, schematic processes describe how generic prior knowledge applies to the understanding of new information. According to Fiske and Taylor (1984), social schema research picks up where categorization research leaves off. In its essence, categorization research is more concerned with the classification of instances, while schema research is more concerned with the application of organized generic prior knowledge to the understanding of new information (Fiske and Taylor 1984, p.117).

The notion of schemata is introduced by Bartlett's (1932) studies of memory. Bartlett makes use of schemata to explain why it is that, in understanding and remembering stories, people tend to reconstruct the story to fit with expectations based on their prior knowledge and past experience. Crocker (1984) applies this to brands, and Meyers-Levy

and Tybout (1989) develop these concepts further. The notion of schema is relatively well-developed in contemporary cognitive and social psychology (Crocker, Fiske, and Taylor 1984; Fiske and Linvill 1980; Rumelhart and Ortony 1978; Rumelhart and Norman 1978; Taylor and Crocker 1981).

Schemata consist of structured groups of concepts which constitute the generic knowledge about events, scenarios action, or objects that has been acquired from past experience (Eysenk and Keanne 1990, p.316).

Crocker, Fiske, and Taylor (1984) define a schema as “an abstract or generic knowledge structure, stored in memory, that specifies the defining features and relevant attributes of some stimulus domain, and the interrelations among those attributes”. A schema can represent any kind of knowledge, from simple knowledge of, for example, the shape of Coca-Cola’s bottle, to more complex knowledge of topics like the performance of particular fabrics in specific products [100% wool is not good for socks (warm, but not durable), whereas it is good for blankets].

The structural features of schema are specified by Rumelhart and Norman (1978) and Crocker and Fiske (1984). Crocker (1984) applies them to consumer behavior context.

These researchers describe the following structural features of schema:

1. A schema has variables;
2. Variables have constraint values;
3. Variables have interrelations;

4. A schema has vertical and horizontal structure;
5. A schema may include particular instantiations of the schema.

1. A schema has variables

A schema specifies the relevant attributes of some stimulus domain. Those attributes are called variables (Rumelhart and Norman, 1978). For example, Fructis, L'Oreal's line of shampoos and conditioners, can be described along the following relevant attributes: scent, country of origin, colour of packaging, special benefits. All of these attribute dimensions are variables describing the Fructis brand.

2. Variables have default values

The most widely agreed upon feature of schemas is that there are "expected" or "default" values associated with the schema's variables (Minsky 1975; Rumelhart & Norman 1978; Rumelhart & Ortony 1977; Schank & Abelson 1977; Taylor & Crocker 1981). When a schema is incompletely instantiated, the schema encourages consumers to fill in missing information with default values. When someone mentions Fructis, the default values of the attributes describing this brand come to mind: a specific good scent, French country of origin, green color of bottle, special effects improving hair health.

3. Variables have constraint values

Variables have a specified range of possible values that they can assume. Not every instantiation will match exactly the default values for the variables, but there are constraints or limits on what values are acceptable (Rumelhart & Norman, 1978). If Fructis launches extensions, there are certain constraints on the variance of typical attributes that would allow an extension to be perceived as still Fructis. For example, the typical scent, or the

color of the bottle might vary only within certain limits. If the bottle is in a different shade of green it will probably still be perceived as Fructis, but if it is in black it is less likely to be perceived as being a legitimate member of the Fructis schema.

4. Variables have interrelations

Schema theory also specifies how variables are related to one another. Variables may be related in time (Schank & Abelson, 1977), in space (Minsky, 1975), they may be correlated (Medin, Altom, Edelson, & Freko, 1982), or they may be causally related (Read 1983; Schank & Abelson 1977). For Fructis, the scent is related in time to healthy look of the hair. Scent comes first, healthy look of the hair comes second, after application.

5. A schema has vertical and horizontal structure

A schema includes information that has two types of structure. Vertical structure refers to the number of levels of abstraction contained in the schema. At the most abstract level is a generic concept that has typical features and relevant attributes. At the most abstract level the constraint values associated with the variables may accept a wide range of values. A schema with vertical structure will have more specific levels within it and the number of levels of abstraction may vary from schema to schema (Cantor & Mischel 1979; Rosch 1978; Schank & Abelson 1977). For example, one of the typical features of the Fructis brand is “promotes a healthy look”. At the most abstract level this variable might accept a wide range of values “for all types of hair”. At the lower level, different products accept only a sub-set range of values on this attribute “for fine hair” or “for normal hair”.

Horizontal structure refers to the number of different subcategories at any given level of abstraction. The range of values on the type of hair includes several different subcategories, such as “for fine hair” or “for normal hair,” etc.

6. *A schema may include particular instantiations of the schema*

The most specific level of a schema may consist of specific instances or exemplars of the schema. Generally, the instances that are stored with the schema will be “good examples” of the schema, with instantiations of variables that are close to the default values for the schema. For example, Fructis has a specific trapezoid shape of the bottle as a default value. Most Fructis shampoos and conditioners have this shape of this bottle. However, Fructis deep conditioner has a different shape of the bottle. It is a specific and less typical instance of the Fructis brand schema.

What changes might occur in response to incongruent information?

Schema theory is specifically relevant to research on the development of the cognitive representation of knowledge in response to new information because it provides comprehensive guidance for the analysis of possible structural changes which might occur with every individual structural variable described above:

- a) variables can be added to/dropped from a schema, or the strength of individual variable associations with the schema might be changed;
- b) the constraint and default values associated with variables can change;
- c) the horizontal structure of the schema can change;
- d) the particular instances associated with the schema can change.

Operationalizations of incongruity

Based on a schema theory perception of brand knowledge structure, a new extension can be incongruent with the parent brand on the following dimensions:

- 1) default values;
- 2) vertical and horizontal structure;
- 3) constraint values associated with the schema;

Overall, schema theory includes recognition of the changes considered by other theories. An additional contribution of schema theory is that, in contrast to other theories, it draws attention to the changes in the schema when the new information is incorporated.

2.1.4 Summary of Different Perspectives on Brand Knowledge Structure

Overall: what brand knowledge changes might occur in response to an incongruent extension?

The previous sections considered three main perspectives on the cognitive structure of brand knowledge. Each of these perspectives provides valuable insights, and it is useful to consider these approaches as complementary. Different theories have provided different definitions of the structural variables of brand knowledge susceptible to changes. These theories are summarized in Table 3.

Table 3: Measures Capturing Changes in the Cognitive Brand Structure

Measures capturing changes	<i>Associative Network</i>	<i>Categorization Theory</i>	<i>Schema Theory</i>
Ratings of associations	Attributes e.g Fructis is a brand strongly associated with mild mixed fruit smell	Feature similarity	Variables Default values
	Benefits e.g Fructis makes your hair shiny		
		Attribute (Graded) Structure/ Ideal Concept Consistency e.g. apple smell is a better representative of Fructis brand than mixed fruit smell	Horizontal Structure
Overall evaluation of the brand	Overall attitude towards the brand e.g Fructis produces inferior quality products		
Subtyping task (group an extension together with other members of the brand or separately) and the type of thoughts generated		Hierarchical structure e.g. hair products (the same superordinate category) are more associated with Fructis brand than bath products are (different superordinate category)	Vertical structure
Measures of acceptable variance of specific associations			Constraint values e.g. Fructis is a brand associated with a mixed fruity scent, it is not associated with a smell of any individual fruit

Often alternative approaches describe the same changes using different terminology. Changes in the attributes and benefits considered by associative network theory are concepts similar to changes in the features defining categories considered by the categorization theory, and changes in default values of variables considered by schema theory. For example, consider Fructis, a brand strongly associated with mild mixed fruit smell. If a new extension with a perfumed smell is launched, the strength of the “mild mixed fruit smell” association might be decreased. Consumers also believe that Fructis makes the hair easy to comb (special benefit associated with the brand). It might be that consumers attribute this special benefit to the presence of fruity acids in Fructis formula that is reflected in the fruit smell. In this case, the new extension with perfumed scent might dilute the valuable association of making the hair easy to comb.

Changes in the attribute structure/ideal concept, a measure proposed by categorization theory, is the same concept as changes in the horizontal structure presented by schema theory. For example, if Fructis launched multiple extensions with apple scent (soap, shower gel, shampoo), over time the brand name might become more associated with the apple scent than with the mild mixed fruit that it is currently strongly associated with. In this case the graded structure of the brand will be changed and the products with an apple scent will become more typical of the brand than the products with mixed fruit smell.

Despite some similar terms, there are also some measures of brand knowledge changes that are unique to each theory of brand knowledge. Overall attitude towards the brand is a measure of changes that have been uniquely advanced based on associative

network theory. For example, currently consumers consider Fructis products to be good quality. If the brand launches an extension that does not satisfy the consumer expectations in terms of quality, the overall attitude toward the brand products might become more negative.

Changes in the constraint values is a unique measure of changes proposed by schema theory. For example, Fructis is associated with a mixed fruity scent, and is not associated with the smell of any single fruit. If this brand launches an apple-scented extension it may gradually change the brand's association with mixed fruity scent. These gradual changes might be captured by changes in constraint values. The acceptable variance of the mixed fruit association might increase.

Taken together, these measures provide a comprehensive list of variables susceptible to changes. The changes of cognitive brand knowledge structure might occur in:

- 1) strength of attributes, benefits, features, and default values of variables associated with the brand; attribute/ideal concept/horizontal structure - measured as ratings of the attributes describing the brand;
- 2) overall attitude towards the brand – measured as overall evaluation of the brand;
- 3) vertical structure of the brand – measured by means of sub-typing task (whether or not an extension is perceived as a member of the parent brand);
- 4) constraint values – measured as acceptable variance of specific associations;

Overall: alternative operationalizations of incongruity between the extension and its brand

The earlier analysis of different approaches towards the cognitive structure of brand knowledge demonstrated not only that brand knowledge changes can be measured differently, but also that incongruity is a multidimensional concept, and thus can be operationalized in different ways. Different operationalizations of incongruity are summarized in Table 4.

Table 4: Operationalizations of Incongruity

Operationalizations\ Dimensions	<i>Associative Network</i>	<i>Categorization Theory</i>	<i>Schema Theory</i>
Number of associations inconsistent with the brand Or degree of association inconsistency with the brand	Attributes	Features	Variables Default values
	Benefits		
Degree of attribute incongruity on values specified by schema			Constraint values
Degree of category closeness to the parent brand category		Vertical structure	Vertical structure
Equal changes in the products/attributes with different status in the brand's graded structure		Attribute Structure/ Ideal Concept Consistency /Graded structure	Horizontal structure

As the table shows, incongruity between the brand and its extension can be operationalized along a number of different structural dimensions:

- 1) Attributes, benefits, features, and default values of variables - operationalized as number of attributes inconsistent with brand attributes or the degree of incongruity on a certain association;

- 2) Constraint values – operationalized as degree of attribute incongruity on values specified by schema;
- 3) Vertical Structure incongruity- operationalized as degree of category relatedness to the parent brand category;
- 4) Attribute structure/ideal concept/horizontal structure incongruity – operationalized as equal changes in the products/attributes with different status in the brand’s graded structure.

To illustrate how the different operationalizations of incongruity apply to a brand, consider the Fructis brand. Different operationalizations of incongruity are summarized in Table 5 and described in more detail below. Consider incongruity defined as the *number of attributes*. Imagine that Fructis, a brand strongly associated with gentleness and high quality, launches two new extensions. One extension is not gentle, and another is not gentle and low on quality. In this case an extension low only on gentleness is less incongruent with its parent brand than the extension low on both gentleness and quality, because it has fewer incongruent attributes.

Now consider incongruity operationalized as a *degree of attribute incongruity*. Fructis, a brand strongly associated with high gentleness, launches two new extensions. One extension is moderately gentle and another is not gentle at all. The not gentle extension will be more incongruent than the extension that is moderate on gentleness because the degree of attribute incongruity is higher.

Incongruity can also be operationalized along the dimension of *category relatedness*. Fructis is a brand strongly associated with shampoos and conditioners. If it

launches two new extensions, styling gel for hair and bath oil, the former extension will be less incongruent than the latter. This is because the former extension is in the same superordinate category (products for hair), while the latter is in more distant superordinate category (health and beauty products).

As a final example, consider incongruity operationalized along the *graded structure* of the category. Fructis is strongly associated with the gentleness provided by fruit acids in its formula. The specific fruity scent strongly associated with all Fructis products provides evidence for the fruit acids in the formula, and consequently for the gentleness of Fructis products. Fructis is also associated with a particular trapezoid shape of the bottle. The association with gentleness and fruity smell is stronger and has a higher status in the graded structure of the Fructis brand category than the association with the trapezoid shape of the bottle. Consider two new Fructis extensions in the shampoo product category: one is in the typical Fructis trapezoid bottle, but with a different (non-fruity, more cosmetic) scent, and another is in the different bottle, but with the same scent. The extension in the same bottle, but with a different scent will be more incongruent to the parent brand than the extension in the different bottle but with the same scent. This is because the fruit scent is a more important attribute of Fructis' graded structure than the shape of the bottle. Table 5 summarizes the examples described above.

Table 5: Examples of Alternative Types of Incongruity Operationalization

Operationalizations Of Incongruity	<i>Less incongruent Extension</i>	<i>More Incongruent Extension</i>
Number of associations inconsistent with the brand	Shampoo not gentle	Shampoo not gentle and low on quality
Or degree of association inconsistency with the brand	Shampoo moderate on gentleness	Shampoo not gentle
Degree of category closeness to the parent brand category	Styling gel	Bath Oil
Equal changes in the products/attributes with different status in the brand's graded structure	Shampoo Non Trapezoid bottle Fruity scent	Shampoo Non fruity scent Trapezoid bottle

In sum, this section considered three different theoretical perspectives on the structure of brand knowledge. Drawing upon these perspectives, it provided a list of theoretically driven measures of brand knowledge changes and possible operationalizations of incongruity between the brand and its extension. It demonstrated that, due to the existence of alternative models of brand knowledge, different measures of brand knowledge were generated. Some of these measures used different terminology to reflect similar brand knowledge changes. Other measures are unique and capture specific changes. In addition, it was shown that incongruity between the brand and extension is a multidimensional concept and can be operationalized in a number of different ways along several structural dimensions of brand knowledge.

Thus, this section addressed two unresolved issues regarding cognitive brand knowledge changes in response to incongruent information presented by brand extensions: how the changes can be captured, and how incongruity between the brand and extension can be operationalized. The next section will address a third unresolved issue - how incongruent information affects brand knowledge changes. It will describe theoretical perspectives leading to alternative predictions and discuss conflicting empirical evidence.

2.2 The Mechanism of Brand Knowledge Changes in Response to Incongruent Information: Competing Theoretical Predictions and Conflicting Empirical Evidence

This dissertation focuses on brand knowledge changes in response to incongruent information. The previous section considered possible brand knowledge changes and alternative operationalizations of incongruity between the brand and extension. This section discusses how incongruent extensions cause brand knowledge changes. The key question for this section is how the cognitive structure of brand knowledge responds to increasing extension incongruity.

There are two alternative perspectives on this issue. One perspective predicts that more incongruent extensions will cause stronger changes. I refer to this as the “bookkeeping theory” perspective, using the name of one the most influential theories proposing this perspective. The other perspective makes the opposite prediction: that less incongruent extensions will cause stronger changes. I refer to this as the “typicality-based theory” perspective, using the name of the most influential theory proposing this perspective.

The analysis of theoretical models and principles underlying the alternative perspectives suggests that the “bookkeeping theory” perspective is more concerned with the evaluation of the extensions’ information on its own: the amount of incongruent information is the critical issue defining the magnitude of brand knowledge change. The “typicality-based theory” perspective is more concerned with the relationships between the extension and its parent brand: the closeness of the extension determines how much the

consumer should weigh the incongruent information presented by this extension, and thus how much the brand knowledge should change. As a result, these two perspectives predict opposite patterns of brand knowledge changes in response to increasing magnitude of an extension's incongruity.

2.2.1 Competing Theoretical Perspectives on Brand Knowledge Changes

This subsection considers theories supporting the “bookkeeping theory” perspective and the “typicality-based” perspective. For each perspective, two types of theories are discussed: cognitive principles and models of brand knowledge changes. Cognitive principles consider cognitive processes underlying schema changes. They predict how much brand knowledge changes in response to a certain degree of stimuli incongruity. Models of changes describe the possible schema changes in response to a specific type of incongruent information. They predict what type of incongruent information would cause stronger changes.

For each perspective firstly, principles regarding cognitive processes underlying schema changes are discussed; secondly, models of changes are described. In addition, the type of extension’s information evaluation underlying the extensions’ evaluation under each perspective is considered. For convenience, the brand knowledge structure will be referred to as brand schema, since schema theory addresses cognitive structure development more directly than other theories do.

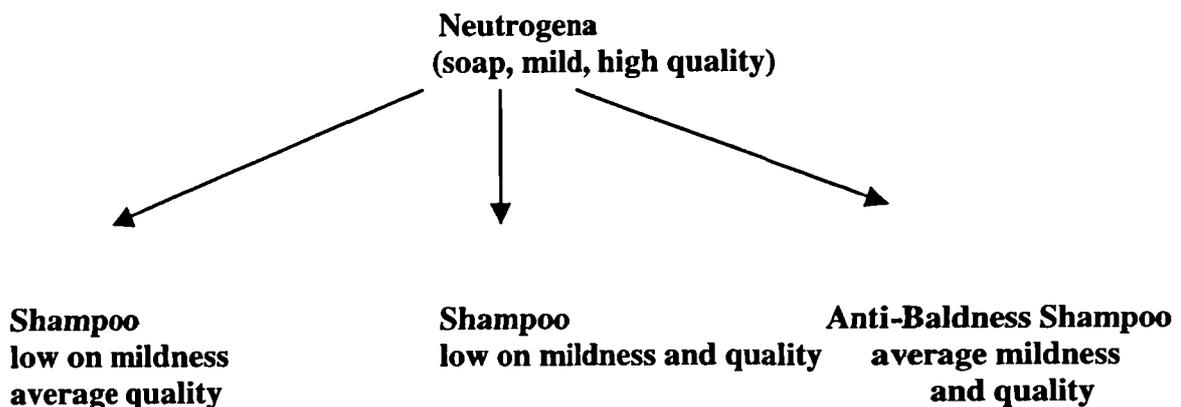
The key point of disagreement among the competing cognitive principles is the contingency between the degree of incongruity between the parent schema/category and the magnitude of changes in the parent structure. Each model builds on a particular cognitive principles. Therefore the models reflect this disagreement as well. These theories are summarized in Table 6.

Table 6: Summary of Cognitive Principles and Models of Cognitive Brand Structure Changes

Maximum changes will be caused by	<i>The Least Incongruent Stimuli</i>	<i>The Most Incongruent Stimuli</i>
Cognitive Principles	Schematic “fit”; Typicality-based	Assimilation – Accommodation
Models of changes	Subtyping	Bookkeeping, Conversion
Processing of extension’s information	Relationships between an extension and its brand are emphasized: category based and thoughtful piecemeal or relational processing	Extension’s information on its own is emphasized: algebraic piecemeal or item-specific processing

Consider the following example. Imagine that Neutrogena, a brand strongly associated with quality and mildness, has launched three new extensions, all in the shampoo category. One shampoo is low on mildness and quality, another is low on quality only, and the last one is a revolutionary miracle anti-baldness shampoo (mildness and quality are average) (Figure 2). Which of these shampoos will have the most drastic effect on consumer perceptions of Neutrogena? Because each of these extensions is incongruent with the parent brand in different ways and to different degrees, different cognitive principles and models of schema changes provide alternative predictions. They will be discussed in two subsequent subsections.

Figure 2: Neutrogena Extensions



2.2.1.1 The “Bookkeeping Theory “ Perspective

This section considers the mechanism of brand knowledge changes under the bookkeeping theory perspective. Firstly, the principles regarding cognitive processes underlying schema changes are discussed; secondly, models of changes are described, and thirdly a potential moderating factor affecting the process of brand knowledge changes, the type of information processing underlying extension’s evaluation is considered.

One cognitive principle and two models of schema changes are grouped under the “bookkeeping theory” perspective. This perspective predicts that more incongruent extensions will cause stronger schema changes. As far as the extension’s information evaluation under bookkeeping theory perspective is concerned, it emphasizes the evaluation of the extension’s information on its own as opposed to evaluating the relationships between the brand and extension.

Cognitive principles underlying brand knowledge changes

Brand knowledge responses to inconsistent information can be described by the assimilation and accommodation processes articulated by Piaget (Flavell 1963; Inhelder and Piaget 1958; Rumelhart and Norman 1972). Assimilation refers to adapting perceptions of the stimulus to fit the perceiver’s schema. For example, suppose Neutrogena – a brand known for being good for the skin – launches a line of bottled water. A consumer may adopt his/her perception of this new product by emphasizing the fact that the water is good for the skin.

In contrast, accommodation refers to modifying or altering the schema rather than the perceptions of stimulus in response to the demands of the environment. For example, the bottled water considered in the example above might make the consumer change the existing schema of Neutrogena. Currently Neutrogena is associated with cosmetic products that are good for skin. If a bottled water extension is launched, the consumer may think that Neutrogena is a brand producing not only products for healthy skin, but also products that good for health in general. However, when a consumer tries to assimilate schema-inconsistent information into the schema, the schema is likely to resist change. Schema change occurs only when the perceiver successfully accommodates the schema to the inconsistent information. According to Piaget, assimilation and accommodation often occur concurrently as the person adapts to the environment.

The principles of assimilation - accommodation predict that the more inconsistent the stimulus is, the more the parent knowledge structure will change, because the process of changes depends on the intensity and amount of stimuli incongruity. These principles provide support for two models of schema changes - the bookkeeping and conversion models, which describe schema changes in response to a specific type of incongruent information. These models are proposed by Rothbart (1981), who examined how stereotypes change in response to new information. However, these models can also be applied to changes in schemas other than stereotypes.

Models of brand knowledge changes

Bookkeeping and conversion models are similar in spirit: they both are supported by assimilation – accommodation principles, and they both focus primarily on the evaluation of the extension’s information on its own rather than on the evaluation of the relationships between the extension and its parent brand. As a result, they both predict that the more incongruent extension will cause stronger schema changes. However, the models do differ with regard to their conception of incongruity: the bookkeeping model emphasizes the number of incongruent attributes in the extension, while the conversion model emphasizes the degree of attribute incongruency with the parent schema.

The bookkeeping model suggests that change occurs gradually. Each time an incongruent instance is encountered the default values for the schema are adjusted. According to this view, schema revision is a gradual incremental process of minor adjustments or “tuning” in response to each new piece of information (Rumelhart and Norman 1978). For the Neutrogena brand example, the bookkeeping model would predict that the strongest schema changes will be caused by an extension that has more inconsistent attributes because the changes are additive: the shampoo low on two attributes (quality and mildness) will adjust Neutrogena’s default values (high expectations of quality and mildness) more than the shampoo low on only one attribute. As a result, Neutrogena might become associated with moderate quality and moderate mildness.

The second model, called the conversion model, involves sudden “all-or-none” change. According to the conversion model, instances that are only slightly or moderately

incongruent with the schema are assimilated into the schema, and the schema therefore does not accommodate in response to them. In contrast to the bookkeeping model, only salient, dramatically incongruent instances produce sudden schema revision. When such an instance is encountered, the revision is drastic, similar in spirit to the change that occurs during a religious conversion. Conversion may involve either major shifts in default values for variables or the addition or subtraction of variables. However, the horizontal and vertical structure of the schema remains unaffected by the conversion process. In other words, the number of levels of abstraction, and the number of subcategories at each level in the schema remain the same. Rothbart (1981) suggests that, at least with respect to stereotyping, the conversion model is a more accurate description of schema change than the bookkeeping model. For Neutrogena, the conversion model would suggest that the revolutionary anti-baldness shampoo would radically change Neutrogena brand perceptions. For example, it might completely change the default values (consumers' expectations of high quality and mildness). Consumers might start thinking of Neutrogena as a brand that produces innovative anti-baldness treatments. The other extensions, which are not radically different from the parent brand, will not according to this theory cause any changes, because they are not strong enough to cause the conversion.

Processing of Extension's Information

The analysis of models and cognitive principles supporting the bookkeeping perspective suggests that, under this perspective, consumers' evaluation of an extension's information on its own is emphasized. Two streams of research are useful for understanding how the evaluation of extension's information happens, one is social

cognition and categorization theories (Fiske and Pavelchak 1986; Sujun 1985), and the other is information processing and elaboration research (Einstein and Hunt 1980; Hunt, Reed, and Schultz 1986; Hunt and Einstein 1981; Tversky 1977; Hunt and Seta 1984; Meyers-Levy 1991; Malaviya, Kisielius, and Sternthal 1996). Both of these perspectives provide descriptions for what happens cognitively when consumers engage in bookkeeping processing.

Social cognition research suggests that when new stimuli information is incorporated in the parent category structure it can be evaluated based on the analysis of individual elements this is called “piecemeal processing”. Piecemeal processing is characterized by the elemental or “piecemeal” evaluative impressions resulting from the combination (sum or average) of the evaluations of isolated attributes. For example, people sometimes make sense of other people or objects by focusing on the others’ or objects’ *own particular individuating characteristics*, forming impressions based on the attributes that go beyond category membership. An example of piecemeal-type processing is a consumer looking for a specific smell in perfume, for example non-flowery smell, evaluating different brands of perfume based on this attribute. He or she will be comparing different products in relation to flowery smell, as opposed to comparing them in relations to the other products produced by the same brand. In this case the consumer will be focused on the individuating characteristics of perfumes he/she tries.

More specifically, algebraic piecemeal processing (Fiske and Pavelchak 1986) describes the information processing that underlies the bookkeeping pattern of brand



knowledge changes. Algebraic piecemeal processing occurs when a set of attributes does not fit a prior category. In this case, people may average or sum the affect tags of all the attributes to arrive at an overall evaluation. The perceiver must average or add in some manner all of the target's particular characteristics in order to arrive to the final assessment. For example, if a consumer comes across a Mercedes Class A, which is not as expensive, not as reliable, and not as big as typical Mercedes models, that consumer might focus on each of these attributes individually and then add up his/her feelings about these attributes to decide whether or not he likes the model and how this model affects his overall attitude towards Mercedes brand.

The concept of item-specific information processing, developed in research on information processing and cognitive elaboration, is similar in many ways to the idea of algebraic piecemeal processing. Cognitive elaboration is the process of associating new information with knowledge already stored in memory (Meyers-Levy 1991). One type of elaboration, known as item-specific processing, focuses on properties that are distinctive or unique to a particular stimuli (Eysenck 1979). Item-specific processing is similar to algebraic piecemeal processing, because they both involve making specific features of a new stimuli more salient which is corresponding to the extension's evaluation under the bookkeeping perspective. Thus, algebraic piecemeal processing, emphasizing the extension's information is a likely explanation for the type of processing underlying the extension's evaluation under the bookkeeping perspective.

2.2.1.2 The “Typicality-Based” Perspective

This section considers the mechanism of brand knowledge changes under the typicality-based perspective. Similar to the previous section, firstly, the principles regarding cognitive processes underlying schema changes are discussed; secondly, models of changes are described; and thirdly a potential moderating factor affecting the process of brand knowledge changes, type of information processing underlying extension’s evaluation, is considered.

In contrast to the “bookkeeping” perspective, the cognitive principles underlying the “typicality-based” perspective emphasize not the extension on its own but the relationship between the extension and the parent brand. Furthermore, the models of brand knowledge changes proposed within this perspective lead to opposite predictions other than the bookkeeping perspective: slightly inconsistent extensions cause stronger changes in the parent brand knowledge structure, because these extensions are more representative of the brand. Extensions that are very different from the parent are, according to this perspective, so different that they do not influence the cognitive structure of the parent schema.

Cognitive principles

Two similar types of cognitive principles that lead to typicality-based model predictions regarding the pattern of brand knowledge changes are typicality-based principle developed within categorization theory and schematic fit principle developed within schema theory.

Typicality-based principle

As explained earlier, the categorization theory perspective argues that categories have prototypicality (or typicality) “gradients”. That is, more typical members of a

category share more attributes with other category members than less typical members do. According to a “typicality-based model”, the impact or weight given to *inconsistent* information about a family brand name depends on whether the inconsistent information pertains to more or less typical members of the category (Rothbart and Lewis 1988). In other words, the more that consumers perceive the new brand extension’s attributes as being inconsistent with the attributes of the family brand name, the less they will generalize the extension’s attributes to the family brand name. If information about the brand extension suggests that the extension is atypical of brands marketed under the family brand name, then consumers will be less likely to make an inference from the new extension to the family brand beliefs. Conversely, the more typical the extension, the more it will cause changes in the parent brand structure.

For the Neutrogena example, a shampoo low on mildness only will cause the strongest changes in the parent brand knowledge because this extension is the most representative (typical) of the parent brand. More incongruent extensions (Shampoo low on both mildness and quality) are less likely to cause strong changes in the parent brand because they will be perceived as being less representative of the parent brand.

“Schematic Fit” principle

The “schematic fit” principle leads to predictions that are similar to the typicality-based perspective, but proposes different underlying processes. Fiske (1982) argues that schematic match determines affective response. “To the extent that an instance is perceived to fit the schema it will receive the affect linked to that category” (p.61). This hypothesis

was explored in experiments on initiating close relationships, forming impressions of politicians, and stereotyping students.

The Minnesota Consumer Behavior Seminar (1987) brought Fiske's idea into a brand-extension evaluation context. It emphasizes that "judgments of similarity of new to existing products may play an important role in determining the degree to which the existing brand impressions can be extended to the new products" (p.229). This idea has had a significant influence on subsequent brand extension studies and the studies on the extensions' effect on the parent brand (Aaker and Keller 1990; Chakravati, MacInnis, and Nakamoto 1990; Loken and Roedder John 1993; Park, Jaworski and MacInnis 1986; Park, Milberg, and Lawson 1991; Roedder John, Loken and Joiner 1998; Romeo 1991).

In general, the "fit" principle suggests that it is easier to generalize from one stimulus to another when stimuli are similar to one another than when they are different. For the Neutrogena example, the principle of "schematic fit" would predict that the strongest changes in brand knowledge structure will be caused by the Neutrogena shampoo low on mildness only. This is because it is the most typical extension and provides the best schematic fit with Neutrogena family brand. The other extensions – low on both mildness and quality and the anti-baldness shampoo – may be too different from the parent and so will cause less strong changes, as there will be more difficulties in generalizing from the parent brand to these dissimilar stimuli.

In sum, both the typicality-based principle and the schematic fit principle are similar in nature. Both emphasize the stimulus' typicality of the parent structure, and both lead to similar predictions: that the more the consumer perceives the new brand extension's information as being inconsistent with the brand, the more atypical this extension is of the parent brand, and thus the less generalizable the inconsistent extension's information is to the parent brand. These principles support the typicality-based model of cognitive structure changes, the subtyping model, which describes the pattern of cognitive structure changes.

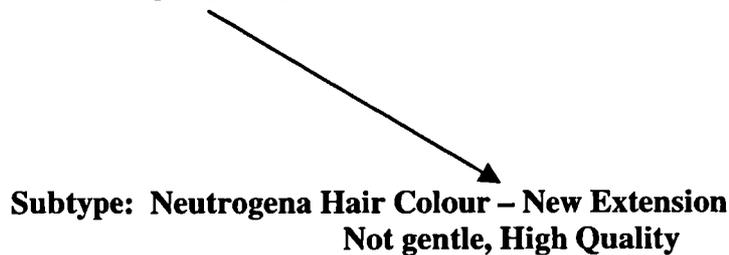
The model of brand knowledge changes

The "subtyping model" proposes that, in response to incongruent information, consumers develop subcategories rather than change original cognitive structures (Taylor 1981). According to this model, incongruent information changes the horizontal and vertical structure of the schema. The schema accommodates the new information by developing a new subcategory at a more specific level of abstraction. The new subcategory has many of the defining features of the schema. However, other attributes that had previously been associated with the entire category are now associated only with some category members; and a new set of perhaps contradictory attributes is now associated with the new subcategory. This type of schema change can be visualized as a branching out of the schema changing from more general, all-encompassing categories to more and more specific, and smaller subcategories. Taylor (1981) suggests that when stereotypes are disconfirmed we do not merely discard the stereotype or adjust it on some continuum, but develop a subcategory for the disconfirming individuals.

For example, the subtyping model suggests that the revolutionary anti-baldness Neutrogena shampoo will be subtyped and perceived as an exception, and therefore, will not change the perceptions of the parent brand. The Neutrogena shampoo low on only one characteristic (gentleness) will cause the strongest changes in the parent brand because it has the lowest probability to be subtyped and disregarded (see Figure 3). Thus, according to subtyping model, the less incongruent extension will cause stronger schema changes than more incongruent extension.

Figure 3: Subtyping Process

**Main Category: Neutrogena Products – Parent brand
Gentle, High Quality**



Extension’s Information Processing

One factor that potentially moderates the pattern of brand knowledge changes is the type of processing used to understand the extension. In contrast to the bookkeeping-theory perspective which emphasizes evaluation of the extension’s information on its own, the typicality-based perspective emphasizes evaluation of the extension’s information as it relates to the parent brand.

Similar to the analysis of the extension’s information processing under the bookkeeping perspective, the same two streams of research, social cognition theories and

information processing theories are useful for understanding how the extension's evaluation happens under the typicality-based perspective.

Social cognition research suggests that there are two types of information processing that consider the relationships between the parent structure and the new stimuli, and thus which might be useful for understanding the cognitive processes behind the typicality-based perspective. These two types of processing are category based and thoughtful piecemeal processing.

Category-based processing is characterized by holistic evaluative impressions, while piecemeal processing is characterized by the elemental or "piecemeal" evaluative impressions resulting from the combination (sum or average) of the evaluations of isolated attributes. People often make sense of other people or objects by categorizing them, and consequently, people's impressions of other people or objects are based on *category-based generalizations* - stereotypes and prejudices about familiar categories. Alternatively, sometimes people make sense of other people or objects by focusing on the others' or objects' *own particular individuating characteristics*, forming impressions based on the attributes that go beyond category membership. For example, if a consumer sees advertising for Gucci perfume, based on category-based generalization, he/she might automatically decide that this perfume is expensive. An example of alternative type of processing, will be a consumer looking for a specific smell in perfume - for example non-flowery smell, - and evaluating different brands of perfume based on this attribute. In this

case the consumer will be focused on the individuating characteristics of perfumes he/she tries rather than on the category membership of this perfumes.

Piecemeal processing may take two forms, which are called “algebraic processing” and “thoughtful processing” (Fiske and Pavelchak, 1986). Algebraic processing was considered in the previous section and proposed as underlying process behind the bookkeeping perspective. In the case of algebraic piecemeal processing, people average or sum the affect tags to arrive at an overall evaluation. Alternatively, thoughtful processing is described by a greater effort to resolve the inconsistency of the category and attributes. On the one hand, thoughtful piecemeal processing resembles algebraic piecemeal processing because of the extended attribute-by-attribute processing. On the other hand, thoughtful processing resembles category-based processing in that the perceiver may try to recall a subcategory that fits the particular configuration of inconsistent attributes comparing the new stimuli and existing category exemplars. For example, when evaluating the characteristics of Mercedes Class A, a consumer will compare them to the characteristics of other Mercedes models to arrive at final evaluation of the new product and to adjust his perception of the core brand.

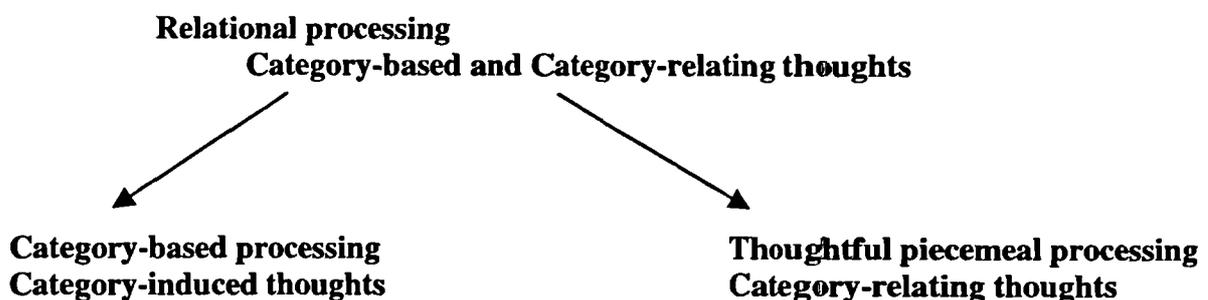
Similar to social cognition theories’ ideas of category-based and thoughtful processing is the concept of relational information processing developed in the studies of information processing and cognitive elaboration (Einstein and Hunt 1980; Tversky 1977). One type of elaboration, the process of associating new information with knowledge

already stored in memory(Meyers-Levy, 1991), known as “relational processing”, involves focusing on similarities or shared themes among disparate pieces of information.

Relational processing includes both category-based and thoughtful piecemeal processing. Category-based processing is characterized by holistic new stimuli evaluation expressed by the general category-induced evaluative thoughts. An example of category-based processing will be consumer thinking: “The new product of the brand must be expensive, because other products of this brand are expensive.” In contrast, thoughtful piecemeal processing is characterized by the “elementaristic” thoughts that consider the relationships between the new stimuli and category. An example of thoughtful piecemeal processing will be the consumer thinking: “It is surprising that this new product is cheap, because other products of this brand are expensive.”

Thoughtful piecemeal processing might be considered as an “elemental” relational processing. The subtle difference between the “category-induced” and “category-relating” thoughts has been accounted for by social cognition and categorization theories but, to the best of our knowledge, this has not been directly accounted for by information processing theories (See figure 4).

Figure 4: Relational, Thoughtful Piecemeal and Category-based Processing



Thus, category-based and thoughtful piecemeal processing, emphasizing the relationships between the brand and extension, underly the extension's evaluation under the typicality-based perspective.

Summary

The two previous subsections discussed competing cognitive principles and models of brand knowledge structure changes. These principles emphasize different aspects of extensions' evaluation (extensions' information on its own versus extensions' relationships with the brand), and make alternative predictions regarding the pattern of brand knowledge in response to discrepant information.

The "bookkeeping theory" perspective emphasizes the evaluation of the extension's information on its own, and makes a prediction that more inconsistent stimuli cause stronger changes in the parent brand structure, because the magnitude of changes depends on the magnitude (intensity or degree) of stimuli incongruity. In contrast, the "typicality-based" perspective emphasizes the extension's relationships with the parent brand, and makes a prediction that less inconsistent new stimuli causes stronger changes in the parent brand structure because the magnitude of changes depends on the stimuli typicality of the parent structure. Empirical studies were undertaken to clarify the controversial issues, although they provided support for alternative theoretical perspectives. These studies are discussed in the next subsection.

2.2.2 Conflicting Empirical Evidence

The following section examines conflicting empirical evidence regarding the bookkeeping and typicality-based models. My analysis of conflicting empirical evidence is structured to address the following question: what is the degree of incongruity between the original schema and the new stimuli that is most likely to cause changes in the parent schema? First, studies supporting the bookkeeping theory perspective will be considered. Then studies supporting the typicality-based theory perspective will be discussed. The analysis of previous studies indicates that the way in which the extension is processed might be a factor moderating the pattern of brand knowledge changes. Studies supporting the bookkeeping theory encourage extension's own information evaluation, whereas studies supporting the typicality-based perspective encourage extension's information evaluation in relationships to the parent brand.

2.2.2.1 Evidence for “Bookkeeping Theory” Perspective

Weber and Crocker (1983) and Sujan and Bettman (1989) provide empirical evidence supporting the “bookkeeping theory” perspective, which predicts that more incongruent new information causes stronger changes in the parent structure. The following brief analysis of these studies will consider each study’s operationalization of the incongruity between an extension and its parent brand, and each study’s measures of cognitive brand structure changes. These issues are important for further reconciliation of conflicting empirical evidence and competing theoretical predictions. The results of this analysis are summarized in Table 7.

Table 7: Conflicting Empirical Evidence: “Bookkeeping Theory” Perspective

	<i>Measures of Structural Changes: Elements of Parent Brand Cognitive Structure Considered</i>	<i>Operationalization of Incongruity between the Parent Brand and Extension</i>
Weber and Crocker, 1983 (Experiment 2)	Attribute structure: Trait ratings for the group and Trait descriptions of an unknown member	Number of inconsistent features in each stimuli
Sujan and Bettman, 1989 (experiment 1)	Constraint values: Perceptions of variability on the focal attribute	Degree of Attribute Incongruity for moderately important attribute
Sujan and Bettman, 1989 (experiment 2)		Pattern of discrepant features distribution (condensed – dispersed):

Weber and Crocker (1983) examine stereotype changes in response to stereotype-inconsistent information. One of their experiments directly supports the view that more incongruent information is more likely to change the parent brand. It investigates the effect of extremity of evidence on stereotype perceptions of corporate lawyers. The stereotypic traits selected for the study were: well-dressed, industrious, and intelligent.

Operationalization of Incongruity

Subjects in the less incongruent subgroup condition received information about nine corporate lawyers who each exhibited a single stereotype-inconsistent behavior and two other stereotypic or neutral behaviors. Subjects in the more incongruent-subgroup condition received information about nine corporate lawyers who each exhibited three stereotype-inconsistent behaviors. Thus, incongruity between the category and new members was operationalized as a number of incongruent attributes.

Measures of changes

Changes of the stereotypes are measured as changes in the stereotypical characteristic trait ratings across the experimental groups.

Results

The stereotypes of subjects in the second group are more strongly affected, thus supporting the bookkeeping theory perspective.

Sujan and Bettman (1989) provide additional support for the bookkeeping theory perspective. They investigate the effect of conveying strongly versus moderately discrepant brand information on the brand and the associated effects on consumers' perceptions of the brand and of the product category.

Operationalization of Incongruity

The stimuli selected were 35mm SLR cameras. Pretests showed sturdiness of the construction to be a moderately important criterion for evaluating 35mm SLR cameras. Three features (waterproof qualities, body construction, and lens construction) were found to be relevant for determining sturdiness. The moderately discrepant (differentiated

product) stimulus selected was a camera that can be used in the rain, has a sturdy body construction, and has a scratch-resistant lens. The extremely discrepant (niche product) stimulus selected was a camera that can be used in the water, has a shatterproof body construction, and has a shatterproof lens. Thus, incongruity between the brand and extension was operationalized as a degree of attribute incongruity with the parent brand.

Measures of Changes

Changes in the category perceptions are measured as changes in the perceptions of variability across different brands on the focal attribute.

Results:

As expected, strong incongruity, in comparison with moderate incongruity, leads to stronger schema changes.

In their second study, Sujan and Bettman (1989) provide additional support for the bookkeeping theory.

Operationalization of Incongruity

In the strong incongruity condition, three discrepant features are clustered in a single ad for the product. In the moderate incongruity conditions, the same three discrepant features are dispersed across three ads for the product.

Measures of Changes

As in the first study, changes in the category perceptions were measured as changes in the perceptions of variability across different brands on the focal attribute.

Results

The results demonstrate the same patterns as in study 1. The strong versus moderate incongruity condition leads to stronger schema changes.

Thus, Weber and Crocker (1983) and Sujon and Bettman (1989), which are conducted in different contexts, report the same results: extremely inconsistent stimuli cause more structural changes in the parent category than moderately inconsistent stimuli. Both studies encouraged evaluation of extension's information on its own and did not provide any prompting facilitating elaboration of extension's relationship with the parent brand.

2.2.2.2 Evidence for the “Typicality-based Theory” Perspective

Most consumer behavior studies investigating the effect of brand extensions on the parent brand are based on “typicality-based” and “fit” principles. According to the typicality-based perspective, closer extensions have more effect on the parent brand. The following brief analysis of these studies considers each study’s operationalization of incongruity between an extension and its parent brand, and each study’s measures of cognitive brand structure changes. These issues are important for further reconciliation of conflicting empirical evidence and competing theoretical predictions. The comparative results of this analysis are summarized in Table 8.

Table 8: Conflicting Empirical Evidence: The “Typicality-based Theory” Perspective

Study	<i>Measures of Structural changes: Elements of parent brand cognitive structure considered</i>	<i>Operationalization of incongruity between the parent brand and extension</i>
Romeo, 1991	Aggregated evaluative measure of brand image	Product category incongruity (the same category and different category); attribute similarity (the same attribute and different attribute)
Weber and Crocker, 1993 (Experiment 3)	Attribute structure: Open-ended descriptions of what is expected of the group member; Rating of the unknown group member on the stereotypic characteristics; Group ratings on stereotypic traits	Typicality (representativeness) of the parent category
Loken and Roedder John, 1993	Attribute structure: Family brand attribute beliefs	Number of disconfirming attributes: (less consistent – 2 disconfirming attribute; more consistent - 1 disconfirming attribute) product category similarity – schematic operationalization; (less inconsistent category: the same basic level category) more inconsistent categories: different basic level category);
Roedder John, Loken and Joiner, 1998		Degree of attribute salience: (prototype’s focal and peripheral attributes); product category similarity: (similar distinct categories, the same category)
Gurhan-Canlı and Maheswaran, 1998	Evaluative measure of brand attitude	Condensed versus dispersed incongruity (a product with six incongruent features or six products with one incongruent feature each)

Romeo (1991) explores the negative effect of a brand extension on a family brand name.

Operationalization of Incongruity

The parent brand is Tropicana a brand associated with orange juice. Four extensions were considered: sherbet and new juice with citrus or raspberry flavor each. Thus, incongruity between the brand and extension was operationalized in two ways:

- product category distance (the same/more distant);
- degree of attribute incongruity (the same/more distant).

Measures of Changes

In this study, changes in the family brand's image are used as a measure of the parent brand knowledge dilution.

Results

In sum, Romeo's (1991) results demonstrate that more close product category extensions cause more changes in the parent brand image. However, this result is found only for incongruity operationalized as product category (juice versus sherbet), not as attribute incongruity. When an extension is in the same product category as the brand (juice), the negative information leads to an average decrease in family brand image. There is no significant difference in the brand image evaluations when the extension is incongruent along the degree of attribute inconsistency with the parent brand. Overall, the results are considered inconclusive (Romeo 1991, p.404). Explaining the results, Romeo suggests that product category information is more salient. The perceptual difference between the degrees of attribute incongruity presented by the extensions may have not been achieved.

In another study supporting the view that more typical members of the category cause more changes, Weber and Crocker (1983) test the effect of the typicality of disconfirming evidence. In this experiment, stereotypes about corporate lawyers are investigated.

Operationalization of Incongruity

Subjects assigned to the typical conditions received disconfirming information about 10 group members (corporate lawyers) who are white men earning approximately \$30,000 per year. Subjects assigned to the unrepresentative condition received disconfirming information about 10 members (corporate lawyers) who are black men earning approximately \$15,000 per year. In both conditions, each of the disconfirming members is described by three sentences representing stereotype-inconsistent traits. Thus, incongruity is operationalized as the degree of attribute incongruity (less representative versus more representative stimuli).

Measures of Changes

Changes in the ratings and number of the stereotype specific attributes are used to capture the changes in the perceptions of the stereotype.

Results

The major finding of this experiment is that disconfirming members who possess demographic characteristics representative of the group produce fewer stereotypic attributes than disconfirming members who are unrepresentative demographically. This means that representative members cause more schematic changes than less representative members do. This experiment supports the typicality-based theory perspective that more close extension cause stronger changes than more incongruent extensions.

Loken and Roedder John (1993) also examine the issue of a brand extension's potential negative impact on parent brand beliefs.

Operationalization of Incongruity

Incongruity is operationalized by the number of the attributes in common between the extension and the parent brand. Neutrogena was used as a parent brand. Important attributes for Neutrogena are mildness and high quality. As the number of inconsistent attributes salient to the category (e.g., harsh, and low quality) increases, the perceived typicality of the extension decreases. Thus, an extension that is harsh and low quality should be perceived as less typical of the Neutrogena name than an extension that is harsh and high quality.

Measures of Changes

In contrast to Romeo (1991), who measures the brand knowledge changes as changes in the *overall brand attitude*, Loken and Roedder John measure brand knowledge changes as the dilution of *specific attribute beliefs*. These measures are similar to the measures of traits used by Weber and Crocker (1984).

Results

The pattern of effects reported in Loken and Roedder John (1993) varies depending on the order in which the dependent measures are taken. When beliefs are measured first (prior to the typicality measures), brand beliefs dilute in a fashion consistent with the bookkeeping model: extensions with one inconsistent cue yielded less dilution effect than extensions with two inconsistent cues. In contrast, when typicality is measured first (prior to measures of beliefs), the results support the typicality-based model: extensions with one

inconsistent cue yielded dilution of this attribute's beliefs and extensions with two inconsistent cues did not yield dilution of gentleness beliefs.

Overall, the Loken and Roedder John (1993) results provide some support for the "typicality-based" principle, but only under the conditions when the typicality is measured first, and only for one attribute (gentleness but not quality). When beliefs are measured prior to the typicality measures, the results provide support for the alternative predictions: more inconsistent stimuli cause more changes in the parent brand structure. The authors explain this result by proposing that the pattern of results is caused by the differential salience of typicality judgments versus brand extension information at the time beliefs are rendered (Loken and Roedder John 1993, p.79). When an extension's typicality is primed (i.e. by asking respondents to rate the brand's typicality), subjects pay more attention to the relationships between the brand and its extension, which leads to typicality-based pattern of changes. In contrast, under the no priming condition, the subjects pay more attention to extension's information on its own, which leads to bookkeeping pattern of brand knowledge changes. This explanation is similar to the one proposed by Romeo (1991). It suggests that when inconsistent extension attributes are most salient to the consumer, information processing based on the extension's information is likely to occur. Alternatively, when product category information is more salient to the consumer, information processing based on the evaluation of extension's closeness to the brand is likely to occur.

Roedder John, Loken and Joiner (1998) address some inconsistent findings reported in previous research. This study proceeds under the same theoretical assumption, partly

confirmed in Loken and Roedder John (1993), that dilution occurs under the condition of moderately inconsistent negative extension. It focuses on the differential effect of an extension's negative information on individual brand products comprising the brand, as well as on the brand name itself. One of the experiments reported in this study directly addresses the effect of stimulus incongruity on the parent brand.

Operationalization of Incongruity

The incongruity between the brand and its extension is operationalized as category distance. A less incongruent extension is an extension in the same product category (line extension), while more incongruent extension is an extension in the different product category.

Measures of Changes

Brand knowledge changes are measured as the changes of brand associations strength.

Results

The results demonstrate dilution of parent brand and flagship product beliefs in response to incongruent information presented by line extension. Extensions in more distant product categories do not cause a dilution of the flagship product beliefs. Thus, the results support the typicality-based perspective: close extensions cause stronger changes in the parent brand beliefs than more distant extensions do.

Additional support for the typicality-based perspective is provided by Gurhan-Canli and Maheswaran (1998).

Operationalization of Incongruity

The study used the incongruity operationalization proposed by Weber and Crocker (1983): the more incongruent condition had one stimulus with six incongruent attributes, while the less incongruent condition had six stimuli with one incongruent attribute each.

Measures of Changes

Changes in the brand knowledge structure were measured as changes in the overall attitude towards the brand.

Results

In contrast to Loken and Roedder John (1993), Gurhan-Canli and Maheswaran (1998) found a typicality-based pattern under the low elaboration (low motivation) condition. The typicality-based pattern of overall attitude towards the brand changes was explained by subtyping theory: the very incongruent extension (the product with six incongruent attributes) was naturally subtyped and disregarded as an unrepresentative member of the brand, and thus did not lead to any changes in the overall attitude towards the brand.

Overall, the typicality-based perspective is supported in the studies that facilitate the extension's information processing in relation to the parent brand. Weber and Crocker (1983), Loken and Roedder John (1993), Gurhan Canli and Maheswaran (1998) designed their stimuli or primed their subjects in a way emphasizing the processing of the extension's typicality relative to the parent brand.

In general, the studies discussed in this subsection provide some evidence that closer extensions cause stronger changes in the parent brand. However, most of these studies supported this hypothesis only partly. In addition, alternative conditions lead to the same results. For example, low motivation in Gurhan-Canli and Maheswaran (1998) and high elaboration in Loken and Roedder John (1993) both lead to typicality-based pattern of brand knowledge changes.

The results of empirical studies on brand knowledge changes can be explained if one considers the type of extension's information processing that was likely to be occurring in each study. The conditions used in the studies on brand knowledge changes manipulate the type of extension information processing, which was likely to facilitate either the salience of the relationships between the brand and extension (thus leading to the typicality-based pattern of brand knowledge changes) or the salience of the extension's information on its own (thus leading to bookkeeping pattern of brand knowledge changes). For example, in Loken and Roedder John (1993) two conditions differ in the order of typicality measurements (condition 1 -typicality measured first, before the measures of brand knowledge changes are measured; condition 2 - typicality measured after the brand knowledge changes are measured). When typicality was measured first consumers were directed to pay more attention to the relationships between the brand and extension. Thus, the relationships between the brand and extension became more salient which lead to typicality-based pattern of brand knowledge changes. Similar, in Gurhan-Canli and Maheswaran (1998) two conditions differ in the degree of the extension's information personal relevance (condition 1 – personally more relevant information; condition 2 –

personally less relevant information). It was shown that when information was more personally relevant, the extension's information on its own became more salient which lead to bookkeeping pattern of brand knowledge changes. In contrast, when the extension's information was personally less relevant, the holistic perception of relationships between the brand and extension became more salient which lead to typicality-based pattern of brand knowledge changes. Table 9 illustrates this argument.

Table 9: Conditions Facilitating Different Types of Processing of Extension's Information and Moderating the Results Supporting Alternative Perspectives of Brand Knowledge Changes

	<i>Typicality-based Perspective is supported</i>	<i>Bookkeeping-based Perspective is supported</i>
Loken and Roedder John (1993)	Typicality measured first before brand knowledge is measured	Typicality measured after brand knowledge is measured
Gurhan-Canli and Maheswaran (1998)	Low elaboration conditions: Comparing typical and very atypical stimuli's effect on the parent brand	High elaboration conditions: Comparing typical and very atypical stimuli's effect on the parent brand

However, the role of the alternative types of information processing as a factor facilitating one or the other type of brand knowledge changes has not been directly tested by these studies and requires further analysis.

2.3 Overall Assessment of the Brand Knowledge Changes in Response to Incongruent Information Literature

Chapter 2 provided an analysis of the literature on brand knowledge changes in response to incongruent information. It emphasized that previous studies of brand extensions' effects used different measures of brand knowledge changes, and a variety of alternative operationalizations of incongruity between the brand and extension. In addition, they captured the changes in the brand knowledge changes under different experimental conditions. Consequently, it is difficult to compare and generalize the results of these studies.

The purpose of this dissertation is to develop a set of studies that helps to facilitate comparison and generalization. To do this, the following issues have been considered:

- a) alternative theories regarding the brand knowledge structure;
- b) theoretically driven measures of brand knowledge changes and dimensions of incongruity between the brand and extension;
- c) competing theories and conflicting empirical evidence regarding the mechanism of brand knowledge changes in response to increasing degree of information incongruity.

The literature review presented in section 2.1 clarified that alternative models of brand knowledge propose different measures of brand knowledge changes. Some of these measures use different terminology, but describe similar changes. Other measures are unique, and capture specific changes.

It also demonstrates that incongruity between the brand and extension can be operationalized in a number of different ways along several structural dimensions of brand knowledge.

In section 2.2, two alternative perspectives on how brand knowledge changes in response to incongruent information were considered. “The bookkeeping theory” perspective focuses on the extensions’ incongruent information evaluation, and therefore, predicts that more incongruent information will cause stronger changes in the parent structure. Evidence for this perspective is presented by research in social psychology and in consumer behavior studies on the product category changes. The “typicality-based theory” perspective focuses on the relationships between an extension and its brand, and therefore, predicts that less incongruent information will cause stronger changes in the parent brand.

The results of empirical studies indicate that the pattern of brand knowledge changes is affected by the type of extension’s information processing (Gurhan-Canli and Maheswaran 1998; Loken and Roedder John 1993; Romeo 1991). However, there is no clarity regarding which conditions and type of information processing lead to one or the other pattern of brand knowledge changes (Gurhan-Canli and Maheswaran 1998; Loken and Roedder John 1993).

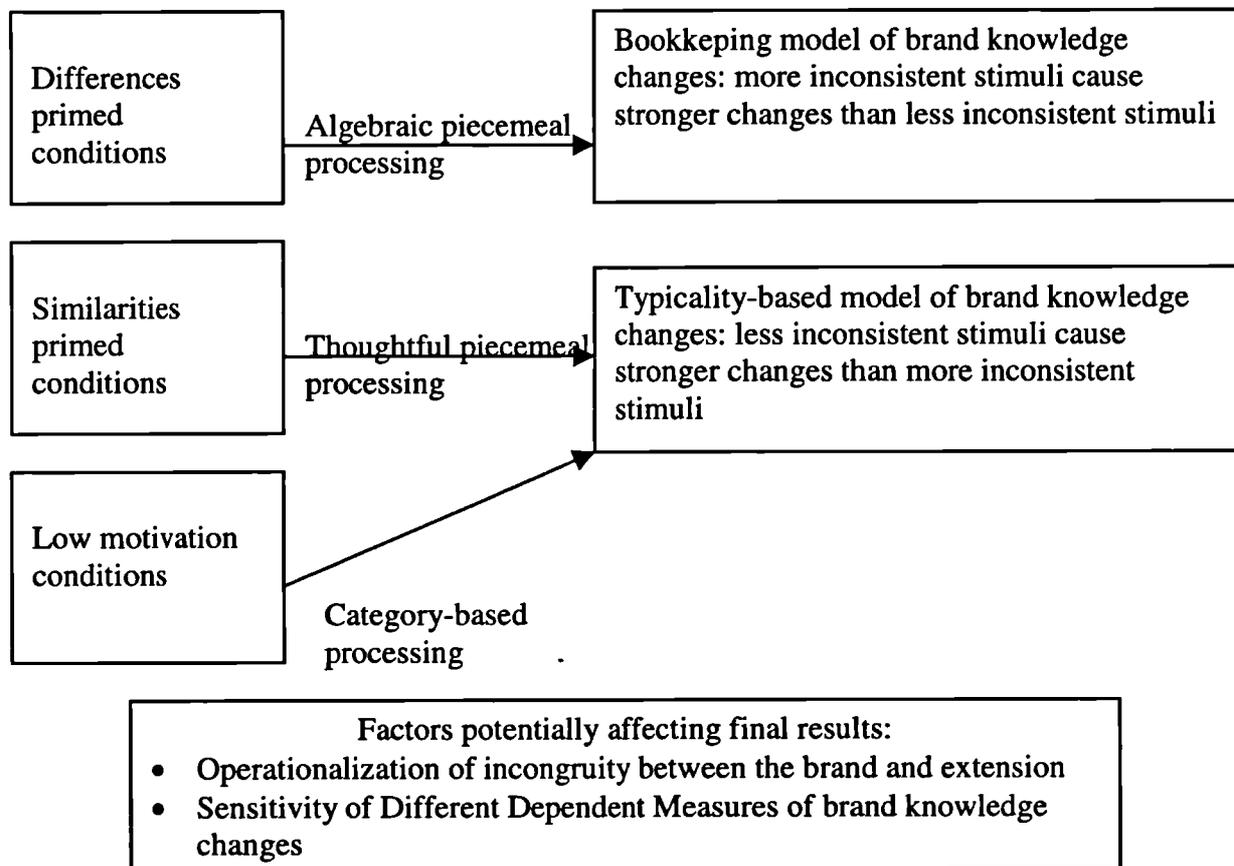
Overall, the analysis of the theoretical models and empirical evidence suggests that the type of processing of the extension’s information appears to be an important factor

moderating the pattern of brand knowledge changes. In addition, authors' operationalization of the incongruity between the brand and extension and measures capturing brand knowledge changes seem to be important factors potentially affecting the obtained results. However, the role of these factors in the process of brand knowledge changes has not been directly examined.

3. FRAMEWORK, PROPOSITIONS AND HYPOTHESES

In this chapter, the factors considered in the previous sections are discussed and a set of propositions that reconciles competing theoretical views and conflicting empirical evidence is advanced. The propositions are summarized in Figure 5. It is proposed that, under one type of information processing (algebraic piecemeal or item-specific processing) brand knowledge changes occur according to the bookkeeping model, whereas under another type of information processing (thoughtful piecemeal or relational processing) brand knowledge changes occur according to the typicality-based model.

Figure 5: Framework Overview



This dissertation focuses on the brand knowledge changes in response to incongruent information presented by extension. Fiske and Neuberg 1990 suggest that the

type of processing depends on the ease with which perceivers can interpret the target's attributes as fitting an available category. The target attributes presented by incongruent extensions do not fit the parent brand category. Thus, processing of incongruent extensions will require some cognitive effort for these extensions to be perceived as the members of the parent category. This type of evaluation is expected to require the elemental analysis of the target attributes, which is the characteristic of piecemeal processing. This study considers the role of two different types of piecemeal processing (algebraic or item-specific and thoughtful or relational) in the process of brand knowledge changes. Algebraic piecemeal processing is expected to emphasize the item-specific information, which is the main factor that affects brand knowledge changes according to bookkeeping theory. Thoughtful piecemeal processing is expected to emphasize the analysis of relationships between the extensions and the brand, which is the main explanatory factor that affects the brand knowledge changes according to the typicality-based theory.

Thus, the first proposition suggests that "algebraic piecemeal processing" leads to bookkeeping pattern of brand knowledge changes: more incongruent stimuli will cause stronger changes than less incongruent stimuli will. Alternatively, "thoughtful piecemeal processing" leads to typicality-based pattern of brand knowledge changes: less incongruent (more typical) extension will cause stronger changes than more incongruent extension.

Drawing upon the findings of information processing studies, it is expected that an orienting task that primes the extension's differences from the brand will facilitate algebraic piecemeal processing and lead to the brand knowledge changes described by the bookkeeping model. In contrast, an orienting task that primes the extension's similarities

with the parent brand will facilitate thoughtful piecemeal processing and lead to brand knowledge changes described by typicality-based model.

The next two propositions address the other two factors that might affect the results obtained in the studies of brand knowledge changes in response to incongruent extension's information: the operationalization of extension's incongruity and the dependent measures capturing the brand knowledge changes. Proposition 2 suggests that under the same conditions alternative operationalizations of incongruity lead to similar patterns of brand knowledge changes. Proposition 3 suggests that under the same conditions alternative measures of brand knowledge changes will show similar patterns of brand knowledge changes. The following discussion addresses the advanced propositions in detail.

3.1 The Effect of Information Processing on the Pattern of Brand Knowledge Changes

Social cognition research suggests that there are two main types of information processing: category-based and piecemeal. Piecemeal processing can be divided further into two different types of processing: algebraic piecemeal and thoughtful piecemeal (Fiske and Pavelchak 1986). This section considers the effect of different types of information processing on the pattern of brand knowledge changes.

Category-based processing is characterized by holistic evaluative impressions, it occurs when the consumer comes across new information that is easy to evaluate based on the consumer's prior knowledge of the existing category. People often make sense of other people or objects by categorizing them, and consequently, people's impressions of other people or objects are based on *category-based generalizations* - stereotypes and prejudices about familiar categories. For example, if a consumer comes across a new Fructis product, e.g. styling gel, based on previous familiarity with Fructis products, he/she might make a category-based generalization and automatically decide that this gel has a mixed fruity smell. He/she might think: "It's another product launched by Fructis. I know that existing products have mixed fruity scent - so this product must have the same scent."

In contrast, piecemeal processing is characterized by the elemental or "piecemeal" evaluative impressions resulting from the combination (sum or average) of the evaluations of isolated attributes. For example, people sometimes make sense of other people or objects by focusing on the others' or objects' *own particular individuating characteristics*,

forming impressions based on the attributes that go beyond category membership. An example of this type of processing, will be a consumer looking for a specific smell in shampoo, for example an apple smell, when evaluating different brands of shampoo based on this attribute. In this case the consumer will be focused on the individuating characteristics of shampoo he/she tries rather than on the category membership of this perfumes. Piecemeal processing may take two forms, “algebraic processing” and “thoughtful processing” (Fiske and Pavelchak 1986).

Algebraic piecemeal processing (Fiske and Pavelchak 1986) occurs when a set of attributes does not fit a prior category and the consumer is encouraged to evaluate this new attributes on their own. In this case, people may average or sum the affect tags of all the attributes to arrive at an overall evaluation. The perceiver must average or add in some manner all of the target’s particular characteristics in order to arrive to the final assessment. For example, if a consumer comes across a Fructis shampoo with a new apple scent, which is different from the current mixed fruity smell, that consumer might focus on the evaluation of the apple scent in general trying to understand his/her feelings about this attribute. If he/she likes apple scent in general, he/she will transfer this attitude to the Fructis brand.

Thoughtful processing is described by a greater effort to resolve the inconsistency of the category and attributes. It occurs when the consumer encounters new information that is difficult, but possible to resolve with the existing category. Under thoughtful piecemeal processing the consumer evaluates the new information on its own, as well as in

relation to his/her knowledge of the category. On the one hand, thoughtful piecemeal processing resembles algebraic piecemeal processing because of the extended attribute-by-attribute processing. On the other hand, thoughtful processing resembles category-based processing in that the perceiver may try to recall a subcategory that fits the particular configuration of inconsistent attributes comparing the new stimuli and existing category exemplars. For example, when evaluating the characteristics of a new Fructis shampoo with an apple smell, a consumer will compare them to the characteristics of other Fructis' products to arrive at a final evaluation of the new product and to adjust his/her perception of the core brand. The consumer might think: "This new shampoo has an apple scent, and even if it's an unusual scent for Fructis' products, it fits well with the mixed fruity scent of current products." This thought elaborates on new product's attributes, as well as on the relationships between this new product and the existing category.

To summarize, category-based processing differs from piecemeal processing in the emphasis each processing places on the analysis of the new information relative to prior category knowledge. Category-based processing is driven by the holistic evaluation of new information based on the prior knowledge of the category, while piecemeal processing is driven by the detailed analysis of the stimuli's new information on its own. Category-based processing occurs when consumer comes across new information that is easy to evaluate based on prior knowledge of the category and which does not require much involvement, while piecemeal processing occurs when the consumer encounters new information that does not fit his/her knowledge of the category. Under category-based processing, the consumer is expected to generate more thoughts based on his prior knowledge of the

category, whereas under thoughtful piecemeal processing, the consumer is expected to generate more thoughts regarding the new information presented in the stimuli.

Category-based processing differs from the thoughtful piecemeal processing in the relative emphasis each of them places on three different types of information: category-based, new stimuli-based and the information that considers the relationship between the new. As has been mentioned above, category-based processing occurs when the consumer comes across new information that is easy to evaluate based on the previous knowledge of the category. The evaluation happens automatically based on the generalization from prior knowledge of the category. In contrast, thoughtful piecemeal processing occurs when the consumer comes across the new information that does not fit the previous knowledge of the category and requires more cognitive effort to resolve with prior knowledge of the category. Thoughtful piecemeal processing requires a detailed analysis of this new information on its own, as well as the analysis of the relationships between this new information and the category. Thus, compared to category-based processing, which facilitates category-based thoughts generation and happens automatically, thoughtful piecemeal processing is expected to facilitate the thoughts considering the relationships between the new stimuli and category, as well as the thoughts considering new extensions' information on its own, and requires more cognitive effort. If a consumer comes across a new Fructis shampoo with apple scent, an example of category-based thought would be the following thought: "It's a new Fructis product, so therefore it probably has the fruit acids of other Fructis products." An example of thoughtful piecemeal processing would be the following thought: "As this new shampoo has an apple scent, it is not a very good product

for Fructis – I choose Fructis for its citrus smell, and so I would not buy it for its apple smell.”

Finally, thoughtful piecemeal processing differs from algebraic piecemeal processing in the relative emphasis placed on the extensions’ information compared to the analysis of the relationships between the new stimuli and the parent category. Thoughtful piecemeal processing takes into account stimuli information on its own, as well as the analysis of the relationships between the stimuli and the parent category, whereas algebraic piecemeal processing is focused on the evaluation of the extension’s information on its own. Thoughtful piecemeal processing requires more elaboration and might potentially generate more thoughts than algebraic piecemeal processing, including the thoughts about the extension’s information on its own. Thoughtful piecemeal processing is expected to generate no fewer thoughts regarding new stimuli information, because it has characteristics of algebraic piecemeal processing: focus on the new stimuli information on its own. Thus, it is expected that under thoughtful piecemeal processing compared to algebraic piecemeal processing, more thoughts that consider the relationships between the stimuli and category will be generated, as well as the same number or more thoughts about the new stimuli information on its own.

The analysis of the types of information processing provides specific predictions regarding the differences among them. Later in this chapter, the effect of these different types of information processing on the pattern of brand knowledge changes is considered. The bookkeeping perspective supports the view that incongruent information effects are

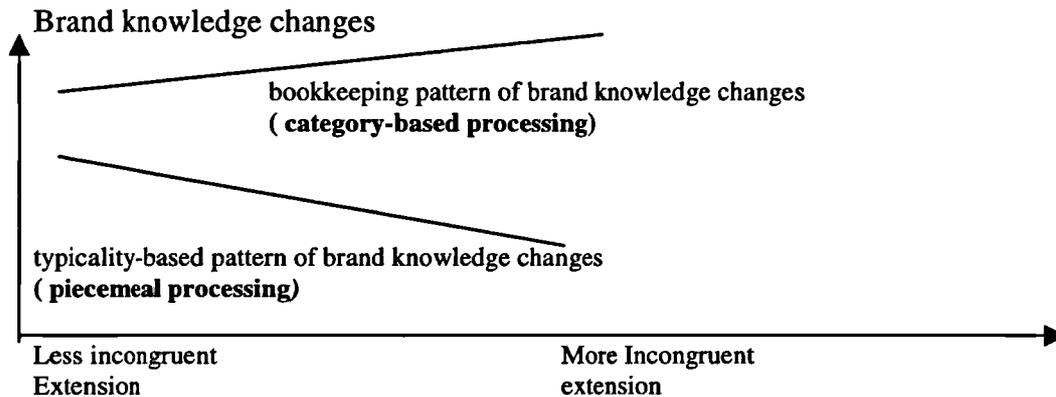
accumulated and that more discrepant extension causes stronger brand knowledge changes. For the bookkeeping perspective, the incongruity of the extension's information is a key factor in explaining the mechanism of brand knowledge changes. Typicality-based theories (the typicality principle, the schematic fit principle, and the subtyping theory) support the view that less incongruent evidence causes more changes. For the typicality-based theory, the typicality of discrepant extension is a key factor in explaining the mechanism of brand knowledge changes. The analysis of theories and cognitive principles suggest that the pattern of brand knowledge changes might depend on the type of extension's information processing. However, the moderating role of the extension's information processing on the pattern of brand knowledge changes needs to be directly tested empirically.

Previous research suggests that different types of information processing (category-based and piecemeal) are expected to lead to opposite patterns of brand knowledge changes. However there are mixed findings regarding which type of processing is responsible for which pattern of brand knowledge changes. Loken and Roedder John (1993) demonstrated that when an extension's typicality is primed, a typicality-based processing is triggered, which leads to brand knowledge changes described by the typicality-based model. Alternatively, under the normal conditions (no cues) brand knowledge changes are described by the bookkeeping model. They suggested that piecemeal processing might be responsible for the typicality-based pattern of brand knowledge changes, while category-based processing might be responsible for the bookkeeping pattern of brand knowledge changes. In contrast, Gurhan-Canli and Maheswaran (1998) reported a bookkeeping pattern of brand knowledge changes under the

high motivation (high elaboration) condition, and a typicality-based pattern of brand knowledge changes under the low motivation condition (low elaboration). Figure 6 illustrates this discussion.

Figure 6: Brand Knowledge Changes in Response to Alternative Types of Incongruent Extension's Information Processing (Loken and Roedder John 1993 versus Gurhan Canli and Maheswaran 1998)

6A: Loken and Roedder John 1993



6B: Gurhan-Canli and Maheswaran 1998

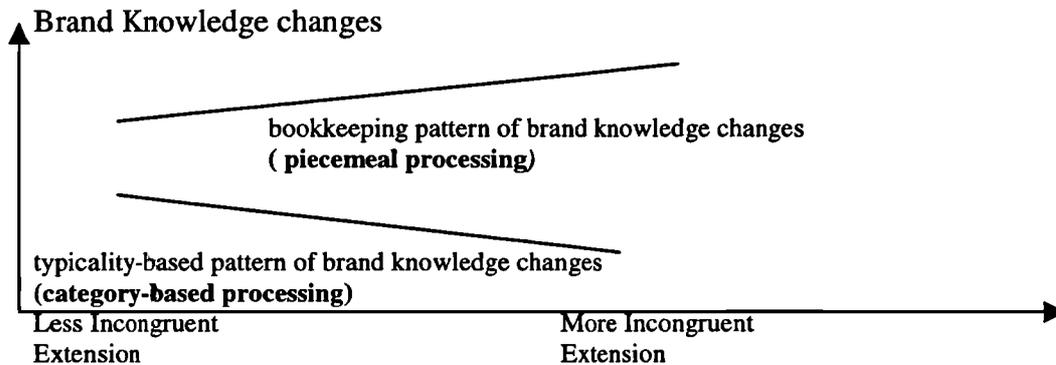
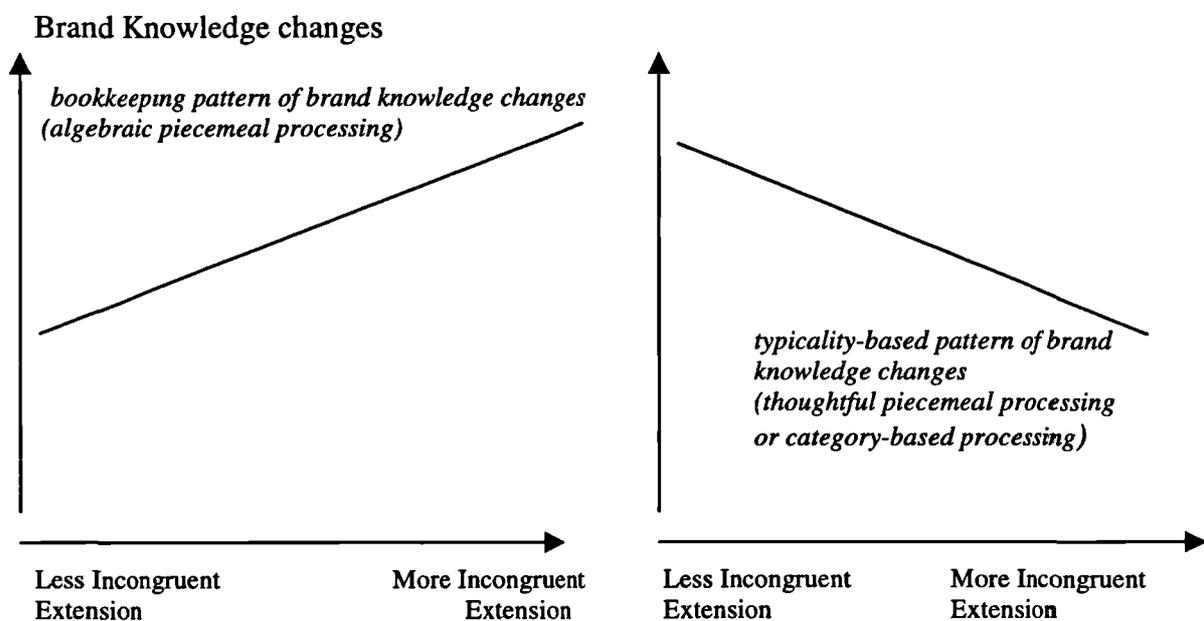


Figure 6 illustrates that there is no clear understanding of which type of processing causes which type of brand knowledge changes. Thus, the relationships between the extension's information processing and the pattern of brand knowledge changes as well as the factors moderating these relationships need to be investigated further.

Proposition 1: The pattern of brand knowledge changes depends on the type of processing used to evaluate the extension. Both bookkeeping and typicality-based patterns

of brand knowledge are caused by piecemeal processing. “Algebraic piecemeal processing” leads to a bookkeeping pattern of brand knowledge changes. The more incongruent stimuli cause stronger changes than the less incongruent stimuli do. In contrast, category-based and “thoughtful piecemeal processing” lead to a typicality-based pattern of brand knowledge changes: the less incongruent (more typical) extension causes stronger changes than the more incongruent extension does. Figure 7 summarizes this proposition.

Figure 7: Brand Knowledge Changes in Response to Alternative Types of Incongruent Extension’s Information Processing



The first proposition reconciles the mixed findings of Loken and Roedder John (1993) and Gurhan-Canli and Maheswaran (1998) suggesting that both bookkeeping and typicality-based patterns of brand knowledge changes might be caused by (high elaboration) piecemeal processing. The high motivation condition in Gurhan-Canli and Maheswaran (1998) facilitated piecemeal processing and lead to bookkeeping pattern of brand knowledge changes. In contrast, typicality priming conditions in Loken and Roedder

John (1993) lead to typicality-based pattern of brand knowledge changes. The authors suggested that these conditions facilitated piecemeal processing. If the high motivation conditions of the Gurhan-Canli and Maheswaran (1998) study activated algebraic piecemeal processing, whereas the typicality-primed condition of the Loken and Roedder John (1993) activated thoughtful piecemeal processing, the results of these two studies can be reconciled.

Futher on this dissertation explores the role of piecemeal processing as a factor moderating the pattern of brand knowledge changes. This focus has been chosen due to three main reasons:

1) previous literature is in agreement with regard to the effect of category-based processing on the pattern of brand knowledge changes: the authors tend to agree that category-based processing leads to typicality-based pattern of brand knowledge changes; however, there is no agreement regarding the effect of piecemeal processing on the pattern of brand knowledge changes;

2) previous literature does not distinguish between two types of piecemeal processing: algebraic and thoughtful, and agrees that there is a need for a better understanding of new stimuli evaluation under these types of processing as well as the effect of these two different types of processing on the pattern of brand knowledge changes;

3) companies are launching increasingly large number of new extensions that are different from the parent brand, Evaluation of this new, relatively difficult to resolve with the parent category, stimuli require piecemeal processsing, which makes it essential to understand different types of piecemeal processing in more detail.

This dissertation investigates algebraic piecemeal processing and thoughtful piecemeal processing along with their differential effect on the pattern of brand knowledge changes. As has been summarized in the Proposition 1, it is expected that algebraic piecemeal processing emphasizes the stimuli-specific information, which is the most important explanatory factor in the bookkeeping theory of brand knowledge changes. Thus, algebraic piecemeal processing is expected to lead to the pattern of brand knowledge changes described by the bookkeeping model. In contrast, thoughtful piecemeal processing emphasizes the relationships between the brand and new stimuli, which is the most explanatory factor in the typicality-based theory of brand knowledge changes. And consequently, thoughtful processing is expected to lead to typicality-based pattern of brand knowledge changes.

The next section considers the conditions that facilitate each type of piecemeal processing.

3.2 Priming Extension's Similarities with the Parent Brand versus Differences from the Parent Brand as a Factor Moderating Processing of Extension's Information

If the first proposition accurately describes the cognitive processing under investigation, one would expect that prompting consumers to engage in algebraic piecemeal processing will moderate their processing of an extension's information and consequently will have a dampening or enhancing effect on the pattern of brand knowledge changes. Priming algebraic piecemeal processing will encourage the bookkeeping pattern of brand knowledge changes where the more incongruent extension is expected to cause more changes in the parent brand than the less incongruent extension. In contrast, priming thoughtful piecemeal processing will encourage the typicality-based pattern of brand knowledge changes, where the close extension is expected to cause more changes in the parent brand than more incongruent extension.

Studies of information processing have showed that an orienting or priming task affects the type of information processing (Tversky 1977; Hunt and Einstein 1981; Einstein and Hunt 1980). Hunt and Einstein (1981) demonstrated that the relational orienting task facilitated relational processing, while individual item orienting task facilitated item-specific processing. Relational processing refers to the encoding of similarities among a class of events, and individual-item processing refers to the encoding of item-specific information (Hunt and Einstein 1981, p.497). Thus, priming similarities between the brand and extension might serve as a relational orienting task facilitating thoughtful piecemeal information processing, while priming

the differences between the brand and extension might serve as individual item orienting task facilitating algebraic piecemeal processing.

One way to prime a particular type of processing is to measure it before the experimental manipulation (Loken and Roedder John 1993). In this way the salience of a relevant factor will be increased. If the extension's similarity with the parent brand is measured first, before the parent brand changes that are caused by an extension are measured, then thoughtful piecemeal processing is expected to be activated. This will encourage the typicality-based effect of the extensions' feedback on the parent brand. Increased brand knowledge changes in response to a close brand extension are expected, along with decreased changes in response to a more distant extension. In contrast, if the extension's differences with the parent brand are measured first, before the parent brand changes that are caused by an extension are measured, the algebraic piecemeal processing is expected to be activated, leading to no effect of extension's typicality or even an increase in the changes caused by a more distant extension and decrease in the changes caused by a more close extension.

Proposition 1a operationalizes Proposition 1 and focuses more closely on the conditions facilitating two types of piecemeal processing and the effect of these two types of processing on the brand knowledge changes.

Proposition 1a: When the extension's similarities with the parent brand are primed, thoughtful piecemeal processing is expected to be facilitated, leading to the typicality-based pattern of brand knowledge changes: less incongruent extensions cause more changes than more incongruent extensions do. When an extension's differences from the parent brand are primed, the algebraic piecemeal processing is expected to be facilitated, leading to the bookkeeping model of brand knowledge changes: more incongruent extensions cause more changes than the less incongruent extensions.

Hypothesis 1 is formulated to test whether differences priming conditions facilitate algebraic piecemeal processing. Hypothesis 2 is formulated to test whether similarities priming conditions facilitate thoughtful piecemeal processing.

As has been discussed in the previous section, algebraic piecemeal processing is characterized by the elementary analysis of extension's features - thus, under algebraic piecemeal processing, a great number of an extension's own information-based thoughts are expected to be generated. It differs from the category-based processing in lack of category-induced thoughts.

An extension's information-based thoughts are thoughts that elaborate on the extension's information on its own; for example, a particular attribute or the extension's product category. For instance, if a brand currently producing expensive organic shampoo

is launching a new product, e.g. liquid soap, a consumer might generate an extension information thought along the line of: “I don’t use liquid soap.”

Category induced thoughts are thoughts generalized from the knowledge of the category, induced by the category knowledge. For instance, a consumer might generate the following thought about the liquid soap extension: “It must be expensive, because other products of this brand are expensive.”

Hypothesis 1: When the extension’s differences from the parent brand are primed, more extension’s own information-based than parent brand-based thoughts are generated

Hypothesis 2 tests whether the similarities priming conditions facilitate thoughtful piecemeal processing. As has been discussed in the previous section, thoughtful piecemeal processing is the most complex type of processing which occurs under the conditions when an extension does not fit the prior category schema. Similarly to algebraic piecemeal processing, it is characterised by an elementary analysis of the extension’s features; and differently from the algebraic piecemeal processing, by a larger number of thoughts that consider the relationships between the brand and extension.

Thoughts that consider the relationships between the new product and the brand are the thoughts that take into account the extension’s information and consider its relationships with the parent brand information.

Thus, it is expected that thoughtful piecemeal processing, relative to algebraic piecemeal processing will generate:

- the same number or more of an extension’s information thoughts;

- more thoughts that consider relationships between the brand and the extension.

Hypotheses H2a and H2b summarise these considerations.

As has been described in the previous section, category-based processing is characterised by the holistic evaluation of new stimuli information based on the prior category knowledge. Under this type of processing, consumers generate a lot of category-based thoughts and general evaluative thoughts. Simple evaluative thoughts are thoughts that express overall attitude towards the brand, the category or the extension (for example, “I like this brand; I use this product frequently.”)

Algebraic piecemeal processing, compared to holistic category-based processing, is expected to generate:

- fewer simple evaluative thoughts;
- fewer category-based thoughts;
- more extension’s own information-based thoughts.

Thoughtful piecemeal processing compared to holistic category-based processing is expected to generate:

- fewer simple evaluative thoughts;
- fewer category-based thoughts;
- more thoughts considering relationships between the brand and extension.

To prove that similarities priming conditions facilitate thoughtful piecemeal, not category-based processing, this condition has to facilitate at least the same number or fewer simple evaluative and category-based thoughts compared to algebraic piecemeal

processing. This consideration is grounded in the analysis of differences between algebraic piecemeal relative to category-based processing. Thoughtful piecemeal processing is similar to algebraic piecemeal processing in terms of the emphasis placed on the “elemental” analysis of extensions’ information rather than on the holistic category-driven evaluation of stimuli. Thoughtful piecemeal processing is a more complex processing than simple algebraic piecemeal processing, as it is further away from category-based processing in terms of the cognitive effort required to resolve the incongruity between the brand and extension. Thus, it is expected that it might generate at least the same or even fewer simple evaluative and category-based thoughts as algebraic piecemeal processing, and fewer than the category-based processing.

To summarize, it is expected that relative to algebraic piecemeal processing, thoughtful piecemeal processing generates:

- more thoughts considering relationships between the brand and extension;
- fewer simple evaluative thoughts;
- fewer category-based thoughts.

In contrast, category-based processing compared to algebraic piecemeal processing generates:

- fewer thoughts considering relationships between the brand and extension;
- more simple evaluative thoughts;
- more category-based thoughts.

These considerations are summarised by hypotheses H2b, H2c, H2d, H2e.

To conclude, hypothesis H2 is designed to test that similarities-primed conditions facilitate thoughtful piecemeal processing through the comparison of thoughts generated under this condition compared to the thoughts generated under differences-primed condition, which is expected to facilitate algebraic piecemeal processing.

Hypothesis 2: When the extension's similarities with the parent brand are primed, relative to the conditions when extensions differences with the parent brand are primed:
H2a: the same number or more extension-based thoughts are generated;
H2b: more thoughts considering relationships between the parent brand and extension are generated;
H2c: fewer simple evaluative thoughts are generated.
H2d: fewer parent brand-based thoughts are generated
H2e: fewer evaluative and category-based thoughts are generated

Hypotheses 1 and 2 are expected to hold for all three types of incongruity operationalizations that will be considered in the next section.

Hypotheses 3 and 4 are designed to test the predictions regarding the pattern of brand knowledge changes under alternative priming conditions. Proposition 1a states that priming an extension's differences with the parent brand will reinforce algebraic piecemeal processing, and thus lead to the bookkeeping pattern of brand knowledge changes. In contrast, priming an extension's similarity with the parent brand will reinforce thoughtful processing, and thus lead to the typicality-based pattern of brand knowledge changes. Proposition 1 claims that algebraic piecemeal processing leads to bookkeeping pattern of brand knowledge changes, more incongruent extension causes more changes, whereas thoughtful piecemeal processing leads to typicality-based pattern of brand knowledge changes, less incongruent extension causes more changes. These two propositions taken together lead to the following hypotheses regarding the pattern of brand knowledge changes under alternative priming conditions:

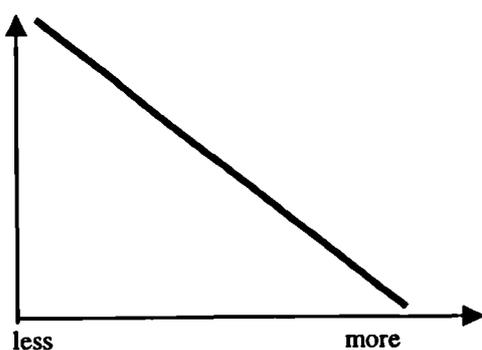
Hypothesis 3: when the extension's differences from the parent brand are primed, more discrepant extensions cause more changes in brand knowledge than less discrepant extensions do.

Hypothesis 4: when the extension's similarities with the parent brand are primed, more discrepant extensions cause less strong changes in brand knowledge than less discrepant extensions do.

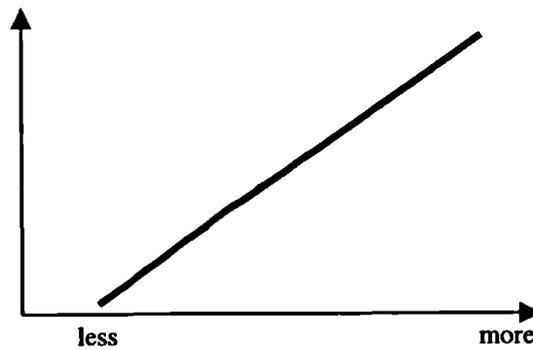
These hypotheses are designed to test the proposition regarding the main effect of extensions' incongruity on the pattern of brand knowledge changes under different conditions. It is important to test the main effects of the extensions' incongruity, because the focus of this research is on the factors facilitating opposite patterns of brand knowledge changes (typicality-based versus bookkeeping) rather than on the interaction effect between the degree of incongruity and brand knowledge changes. The purpose of this research is to understand the conditions leading to each pattern of changes. We expect to identify interaction effect if hypotheses 3 and 4 are supported, however, the main effects are more important for the theory tested in this research. There is no separate hypothesis on the interaction effect, but the data on the interaction effects will be presented in the data analysis section. The pattern of changes predicted by hypothesis 3 is illustrated by Figure 8b, whereas the pattern of changes predicted by hypothesis 4 is illustrated by Figure 8a.

Figure 8: Predicted Patterns of Brand Knowledge Changes

8A: typicality theory-based pattern
(similarities primed condition)
Brand knowledge
changes



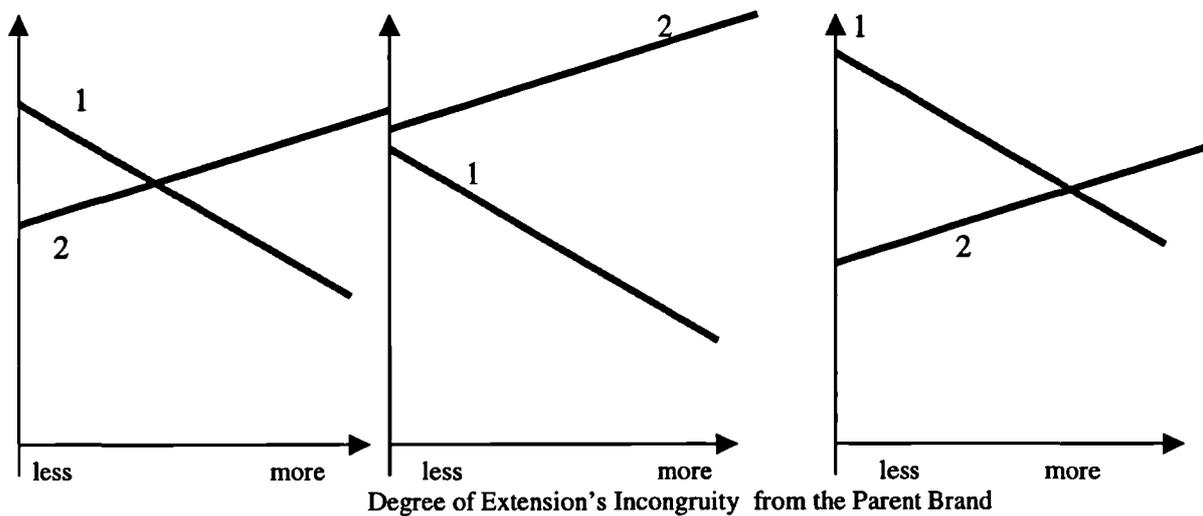
8b: bookkeeping theory-based pattern
(differences primed condition)
Brand knowledge
changes



Degree of Extension's Incongruity from the Parent Brand

Proposition 1a describes the pattern of changes under each condition, but it does not specify the relationships between the patterns of changes under different conditions. Figure 9 shows that, theoretically several relationships between the patterns of changes under different conditions are possible. Thus, the theoretically predicted relationships need to be specified.

Figure 9: Possible Relationships Between the Patterns of Brand Knowledge Changes under Different Conditions



Condition 1 – similarity is primed
 Condition 2 – incongruity is primed

Priming an extension's similarities with its parent brand is expected to facilitate thoughtful piecemeal processing, which is characterised by an emphasis on the relationships between the brand and extension. Under this type of processing the extension's typicality of the brand will become more salient than under conditions without priming. The expected pattern of brand knowledge changes is described by the typicality-based perspective: priming an extension's similarities with its parent brand will make the extension's typicality of the brand more salient, which will lead to stronger brand knowledge changes in response to more close extensions and less

strong changes in response to more distant extensions than under conditions without priming.

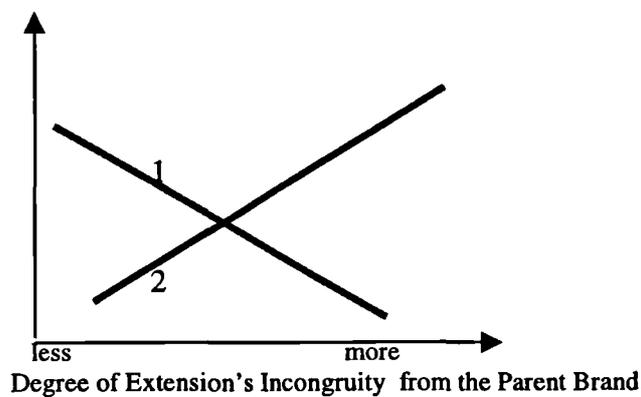
In contrast, priming an extension's differences from its parent brand is expected to facilitate algebraic piecemeal processing, which is characterised by an emphasis on the extension's information on its own. Under this type of processing the extension's information on its own will become more salient than under conditions without priming. The expected pattern of brand knowledge change is described by the bookkeeping perspective. Priming an extension's differences from its parent brand will make the extension's information more salient, which will lead to stronger brand knowledge changes in response to more distant extensions and less strong changes in response to more close extensions than when under conditions without priming.

In sum, it is expected that for more close extensions, priming similarities will lead to stronger changes, whereas priming differences will lead to less strong changes than under normal conditions. In contrast, for more distant extensions, priming similarities will lead to less strong changes, whereas priming differences will lead to stronger changes than when under normal conditions.

Proposition 1b specifies the predicted relationships between the patterns of brand knowledge changes under one condition relative to the other.

Proposition 1b: When the extension’s similarities with the parent brand are primed, the less incongruent extension is expected to cause stronger changes, while the more incongruent extension is expected to cause less strong changes than under conditions when the differences between the parent brand and extension are primed. Alternatively, when the extension’s differences from the parent brand are primed, the more incongruent extension is expected to cause stronger changes, while the less incongruent extension is expected to cause less strong changes than when under the conditions when similarities are primed. The expected effects are presented by figure 10

Figure 10: Expected Relationships Between the Patterns of Brand Knowledge Changes under Different Conditions



Condition 1 – similarity is primed
 Condition 2 – difference is primed

Proposition 1b discusses the expected difference in stimuli evaluation under two different conditions (similarity primed/difference primed). This proposition is designed as an additional test to investigate whether when the similarity is primed, brand knowledge changes occur according to the typicality-based model, while when

the difference is primed, brand knowledge changes occur according to the bookkeeping model. This proposition is tested by hypotheses 5a and 5b.

H5a: when similarities between the brand and extension are primed, less incongruent extensions cause stronger brand knowledge changes than under conditions when differences between the brand and extension are primed.

H5b: when similarities between the brand and extension brand are primed more incongruent extensions cause less strong brand knowledge changes than under the conditions when the differences between the brand and extension are primed.

Hypotheses 5 are testing the main effect of the conditions. They are illustrated by figure 10. Each of the hypotheses about the pattern of brand knowledge changes (Hypotheses 3,4,5) is expected to hold for alternative operationalizations of incongruity and different dependent measures of brand knowledge changes to be considered in the next section. Similar patterns of results are expected under the same conditions for alternative operationalization of incongruity and measures of brand knowledge changes.

3.3 Operationalizations of Extension's Incongruity and Measures of Brand Knowledge Changes

Previous studies on a brand extension's effect on the parent brand used different operationalizations of brand-extension incongruity and used different dependent variables to capture the pattern of brand knowledge changes. The conflicting results of these studies may be caused by these differences. Table 10 summarizes the operationalizations of incongruity, the dependent measures used in the previous studies, and the results found under these alternative operationalizations.

The table shows that similar operationalizations of incongruity sometimes cause quite opposite results. For example, an extension in a new product category incongruent with the parent category on a number of incongruent attributes (two attributes) (Loken Roedder John 1993) leads to bookkeeping pattern of brand knowledge changes. On the other hand, an extension with a similar operationalization of incongruity (6 attributes) (Gurhan-Canli and Maheswaran 1998), leads to typicality based pattern of brand knowledge changes.

The table also demonstrates that different measures were used to capture the brand knowledge changes. Some measures appear to be less sensitive than the others are. For example, under some conditions in several studies (Aaker and Keller 1992; Gurhan-Canli and Maheswaran 1998; Romeo 1991) no changes of the overall attitude are found. However, under different conditions in the same studies the changes of the overall attitude are found. Other measures are more sensitive to changes and allowed measuring the changes of the brand knowledge change more frequently. However, these results might be attributed to experimental conditions rather than to the measures used.

Table 10: Alternative Operationalizations of Incongruity and Measures of Brand Knowledge Changes

Study	Measures of changes	Operationalization	Results
Loken and Roedder John, 1993	Cognitive measures of associations Strength changes	Number of inconsistent attributes	Under normal conditions both less discrepant and more discrepant stimuli cause brand knowledge dilution under normal conditions: <i>Bookkeeping model is supported</i>
Sujan and Bettman, 1989	Attribute variability		
Weber and Crocker, 1984	Associations strength		
Loken and Roedder John, 1993	Cognitive measures of associations Strength changes	Degree of attribute incongruity	Under conditions when extension's typicality is measured before the experiment more typical extension causes more changes than less typical extension: <i>typicality model is supported</i>
Gurhan-Canli and Maheswaran, 1998	Overall attitude towards the brand		Under low motivation conditions more typical extension causes more changes than a less typical extension does: <i>typicality model is supported</i> Under high motivation conditions less typical extension causes the same amount of changes as more typical extension does: <i>bookkeeping model is supported</i>
Sujan and Bettman, 1989	Attribute variability	Category distance	More discrepant stimuli cause more brand knowledge changes: <i>bookkeeping model is supported</i>
Aaker and Keller, 1992	Overall attitude towards the brand	Category distance	Under the conditions without intervening extension: no changes Under the conditions with an intervening extension: less discrepant stimuli cause more brand knowledge changes: <i>typicality model is supported</i>
Romeo, 1991	Overall attitude towards the brand		More incongruent stimuli caused more changes: <i>bookkeeping model is supported</i>
Roedder John, Loken and Joiner, 1998	Cognitive measures of associations Strength changes		Less discrepant stimuli cause more brand knowledge changes: <i>typicality model is supported</i>

Overall, the findings of previous research are mixed and vary within and across the alternative operationalizations of incongruity and measures of brand knowledge changes. Thus, it is important to address the relationships between the incongruity operationalization and the pattern of brand knowledge changes in more detail, controlling for the degree of extension's incongruity and conditions under which the extensions are presented. The potential differential sensitivity of different measures of brand knowledge changes also needs to be investigated.

In this dissertation, I consider three alternative operationalizations of incongruity under the same conditions and with the similar degree of an extension's incongruity to increase the comparability of results.

Proposition 2: incongruity operationalized as the number of inconsistent attributes, the degree of attribute incongruity, and the extension's category distance cause the same pattern of brand knowledge changes under the same conditions. The conditions reinforcing "algebraic piecemeal processing" lead to the bookkeeping pattern of brand knowledge changes, while conditions reinforcing "thoughtful piecemeal processing" lead to the typicality-based pattern of brand knowledge.

Proposition 3: under the same conditions alternative measures of brand knowledge changes will show the same patterns of brand knowledge changes.

As has been discussed above, the hypotheses developed in the previous section are expected to hold for alternative operationalizations of incongruity and measures of brand knowledge changes.

This dissertation will consider three operationalizations of incongruity:

- the number of incongruent attributes (Gurhan-Canli and Maheswaran 1998; Loken and Roedder John 1993; Sujan and Bettman 1989; Weber and Crocker 1984);
- the degree of attribute incongruity (Sujan and Bettman 1989);
- the category distance (Aaker and Keller 1992; Roedder John, Loken and Joiner 1998; Romeo 1991).

Two different measures of brand knowledge structure changes will be analyzed:

- the strength of associations (Loken and Roedder John 1993; Roedder John, Loken and Joiner 1998);
- and the overall attitude (Gurhan-Canli and Maheswaran 1998; Aaker and Keller 1992; Romeo 1991).

It is expected that under the same conditions different operationalizations and measures will show a similar pattern of changes. Overall, the following more specific hypotheses are developed. Hypotheses 1 and 2 test the type of processing under each priming conditions for each of the six extensions used in this research. Hypotheses 3 and 4 test the pattern of brand knowledge changes under each condition for seven different pairs of extensions. These seven pairs operationalize three types of incongruity between the parent brand and extension: the number of incongruent attributes (for two categories), the degree of attribute incongruity (for two categories), and the category distance (for 3

different attributes). Hypothesis 5 test conditions' main effect for 6 extensions used in this study.

Hypothesis 1: When the extension's differences from the parent brand are primed, more extension's own information-based than parent brand-based thoughts are generated.

H1 holds for

- a: line extensions with one slightly incongruent attribute;
- b: line extensions with two incongruent attributes;
- c: line extensions with one more incongruent attribute;
- d: extensions in new product category with one slightly incongruent attribute;
- e: extensions in new product category with two incongruent attributes;
- f: extensions in new product category with one more incongruent attribute.

Hypothesis 2: Priming the extension's similarities with the parent brand facilitates thoughtful processing:

relative to the conditions when extensions differences with the parent brand are primed

H2a: the same number or more extension-based thoughts are generated;

H2b: more thoughts considering relationships between the parent brand and extension are generated;

H2c: fewer simple evaluative thoughts are generated.

H2d: fewer parent brand-based thoughts are generated

H2e: fewer evaluative and category based thoughts are generated

H2 a,b,c,d and e hold for:

- 1): line extensions with one slightly incongruent attribute;
- 2): line extensions with two incongruent attributes;
- 3): line extensions with one more incongruent attribute;
- 4): extensions in new product category with one slightly incongruent attribute;
- 5): extensions in new product category with two incongruent attributes;
- 6): extensions in new product category with one more incongruent attribute.

Hypothesis 3: when the extension's differences from the parent brand are primed more discrepant extensions cause more changes in brand knowledge than less discrepant extensions do.

H3 holds for:

- 1): line extensions when incongruity operationalized as number of inconsistent attributes;
- 2): the extensions in the moderately discrepant product category incongruity operationalized as number of inconsistent attributes;
- 3): line extensions when incongruity operationalized as degree of attribute inconsistency;
- 4): the extensions in the moderately discrepant product category when incongruity operationalized as degree of attribute inconsistency;
- 5): line extensions versus moderately discrepant extensions with one inconsistent attribute;
- 6): for the line extensions versus moderately discrepant extensions with two inconsistent attributes;
- 7): for the line extensions versus moderately discrepant extensions with moderate degree of attribute inconsistency.

Hypothesis 4: when the extension's similarities with the parent brand are primed, more discrepant extensions cause less strong changes in brand knowledge than less discrepant extensions do.

H4 holds for:

- 1): line extensions when incongruity operationalized as number of inconsistent attributes;
- 2): the extensions in the moderately discrepant product category incongruity operationalized as number of inconsistent attributes;
- 3): line extensions when incongruity operationalized as degree of attribute inconsistency;
- 4): the extensions in the moderately discrepant product category when incongruity operationalized as degree of attribute inconsistency;
- 5) line extensions versus moderately discrepant extensions with one inconsistent attribute;
- 6): for the line extensions versus moderately discrepant extensions with two inconsistent attributes;
- 7): for the line extensions versus moderately discrepant extensions with moderate degree of attribute inconsistency.

If hypotheses 3 and 4 are true, it is expected that there is an interaction effect between the priming conditions and the levels of the extensions' incongruity. There is no formal hypothesis regarding interaction effect, since the focus of this research is on the patterns of brand knowledge changes under different conditions. However, the interaction effect is tested in the data analysis section.

Hypothesis 5a: when similarities between the brand and the extension are primed, less incongruent extensions cause stronger brand knowledge changes than under conditions when differences between the brand and extension are primed:

- 1) H5a holds for the line extensions with one inconsistent attribute;
- 2) H5a holds for the moderately distant extensions with one inconsistent attribute.

Hypothesis 5b: when similarities between the brand and extension are primed, more incongruent extensions cause less strong brand knowledge changes than under the conditions when the differences between the brand and extension are primed:

- 1) H5b holds for the line extensions with two inconsistent attribute;
- 2) H5b holds for the moderately distant extensions with two inconsistent attribute;
- 3) H5b holds for the line extensions with a high degree of attribute inconsistency;
- 4) H5b holds for the moderately distant extension with a high degree of attribute inconsistency.

The propositions developed in this chapter are summarized by Figure 10. The central proposition is that under conditions when an extension's differences from the parent brand is primed (algebraic piecemeal processing facilitated), more incongruent stimuli cause

stronger changes in the brand knowledge. Whereas, when the similarities between the brand and extension are primed (thoughtful piecemeal processing is facilitated), less incongruent stimuli cause stronger changes in the brand knowledge. These results are expected to hold, regardless of how incongruity is operationalized and regardless of how brand knowledge changes are measured. The next chapter will describe the experimental design that allowed the testing of these propositions and hypotheses.

4. METHODOLOGY

This chapter describes the experiment used to test the hypotheses advanced in the previous chapter. This experiment explored the relationships between the operationalizations of incongruity and the pattern of brand knowledge changes. It investigated the main and interaction effects of several variables simultaneously, by using a mixed factorial experimental design.

The factorial design has advantages of economy, control, and generality. Factorial designs are economical in the sense that they provide considerably more information than separate single-factor experiments, often at reduced cost of subjects, time, and effort. A factorial design also allows researchers to assess the generality of a particular finding by studying the effects of one independent variable under different experimental conditions. This generality can be evaluated by examining the results of a factorial experiment for interaction.

This chapter describes the stimuli development, provides a general overview of the experimental studies, discusses sample and procedures, outlines the dependent measures that were used to capture brand knowledge changes, and presents stimuli design that was used in the studies.

4.1 Stimuli Development and Baseline Structure of Associations Measurements

This research investigates the effect of three different types of incongruity operationalizations (category distance, number of incongruent attributes, degree of attribute incongruity) on brand knowledge changes. Thus, it was important to find appropriate brands and brand extensions that are incongruent along each dimension.

The Fructis brand was selected as a stimulus brand. The intention of this research is to extend the previous research on the extension's effect on the parent brand. Because previous brand-extension studies used Neutrogena and Johnson and Johnson, brands strongly associated with the shampoo product category (Loken, Roedder John 1993; Roedder John, Loken and Joiner 1998), the use of a shampoo brand was viewed as being appropriate for extending these previous results. At the time of this research Fructis produced and marketed shampoos, hair conditioners, and hair masks. Preliminary interviews with subjects similar to those used in the main experiments (women aged 18 to 49, who were familiar with the product) demonstrated that the Fructis brand, produced by L'Oreal's Laboratoires Garnier, is a brand consumers associated with gentleness, mixed fruity scent, special healthy benefits characteristics and youth imagery (Appendix 1). Three pretests were conducted to collect consumer perceptions about the brand and to develop stimuli materials.

The first pretest involved qualitative individual interviews with 15 consumers and a Fructis brand manager. These interviews provided information about the attributes used by

consumers when characterizing the brand. These interviews also explored which incongruent brand extensions the brand might possibly launch.

The second pretest (a survey with 30 consumers) was used to clarify the characteristics describing the brands to determine the focal characteristics that were manipulated for the design of stimuli materials. Ratings of consumer perceptions on the attributes describing the brand were taken (on a scale from 1 to 7, where 7 means “likely” and 1 means “unlikely” to be associated with an attribute).

As a result of these pretests the following data were collected:

- 1) Characteristic attributes of the brand;
- 2) Possible brand extensions and their relative perceived distance from the parent brand.

The third pretest verified that the specific categories used for brand extensions did represent varying levels of brand extension incongruity. In addition, this pretest verified the importance of the attributes used for manipulations in the selected extension’s categories. Subjects completed a questionnaire measuring their perception of proposed new product’s incongruity with the Fructis image, the importance of manipulated attributes in the new product’s category, usage of individual products marketed under the Fructis name, and selected demographic characteristics. Findings from these pretests were used to select the experimental stimuli.

Pretest Results: Brand Associations

The following groups of attributes were found to characterize the brand.

- 1) Mixed fruity smell associations and special benefits related to the presence of fruit acids and vitamins

Gentle mixed fruity smell is the strongest characteristic associated with Fructis. According to consumers, it is difficult to tell which individual fruit smells are mixed up to form the resulting smell. The presence of citrus smell was frequently mentioned in the interviews¹. Moreover, according to the respondents, the presence of fruit acids and vitamins gives Fructis special performance benefits, such as, making hair gentle, easy to comb and shiny. The smell and these performance benefits were strongly associated in consumers' minds.

- 2) Science and technology association

The next group of associations is related to brand's positioning as a "science and technology" brand. Consumers report that the presence of fruit acids, vitamins B3, B6 and special performance characteristics makes the hair gentle, easy to comb and shiny. They also believe that Fructis has treatment qualities that fortify the hair and are developed based on the latest achievement in science and technology.

According to Fructis' brand manager, "science and technology" is the target positioning association for Fructis. Consequently, it is also an umbrella theme for Fructis'

¹ According to a Fructis brand manager, the products for normal, greasy hair and antidandruff products have a mixed smell of melon and grapefruit, while the treatment mask has a gentle almond milk smell.

advertising campaigns, so it is not surprising that this is a key attribute mentioned by consumers.

3) Youth imagery associations – not trustworthy

Consumers describe the brand as being more appealing to young people. This means that Fructis has higher image appeal than performance appeal, is not completely trustworthy (“it’s not serious enough”), and has average perceived quality.

The results of pretest 2 (consumer rating of the brand characteristics) are reported in Appendix 2. The characteristics were measured on 4 seven-point scales. Scales were constructed so that lower numbers indicated more positive beliefs about the family brand. The following 4 seven point scales were used to evaluate brand characteristics: Fructis products make the hair gentle: (strongly agree- strongly disagree; extremely likely- extremely unlikely; very probable- not at all probable; very characteristic of the Fructis products – not at all characteristic of Fructis products). The rating “1” meant strongly agree, extremely likely, very probable, very characteristic of the Fructis products, whereas the rating “7” meant strongly disagree, extremely unlikely, not at all probable, not at all characteristic of the Fructis brand products.

Pretest Results: Extensions Stimuli

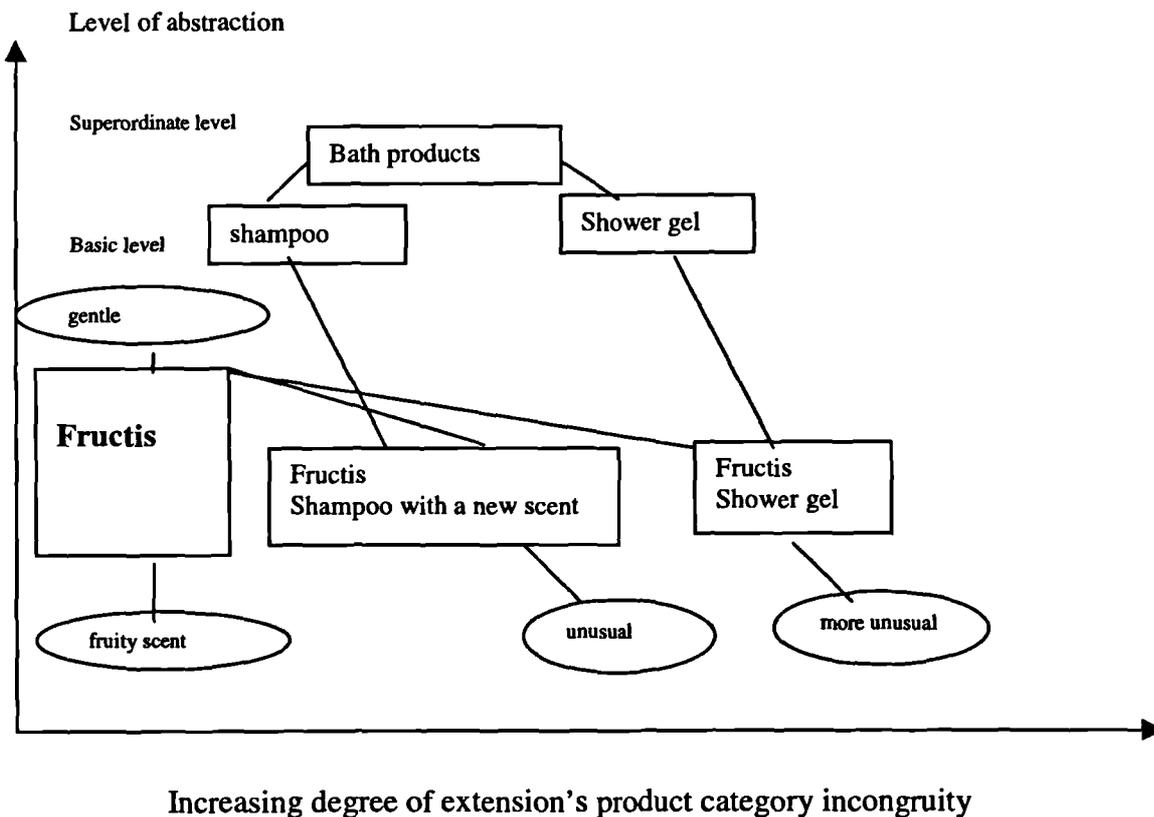
Brand Extension’s Incongruity Operationalizations

Based on the results of pretests 2 and 3, the following brand extensions incongruent with the brand along the targeted dimensions (category distance, number of inconsistent attributes, degree of attribute inconsistency) were chosen.

Incongruity as Category distance

The extension's category distance is operationalized as a line extension (the same basic category), and different close basic category (see Figure 11). Shampoo is used as a line extension for the Fructis brand. As shown in the pretests, this product belongs to the same basic category as the other Fructis products, but it had additional features that made it different from the core Fructis shampoos (described in the next section). A shower gel product was shown to be more incongruent than shampoo. It belongs to a different basic category, but to the same superordinate category (bath products). Thus, an increasing degree of Fructis extensions' incongruity along the product category dimension is operationalized as shampoo (the closest extension) and shower gel (more distant extension).

Figure 11: Fructis' Brand Extensions: Hierarchy of Categories



The selected extensions were proposed by consumers in the first pretest and included in the third pretest for the quantitative analysis. The data from the third pretest demonstrated the perceived difference in extensions' incongruity

Incongruity as a number of inconsistent attributes

Pretests showed that vitamins B3, B6 and a mixed fruity scent are the important attributes characterizing the Fructis brand. Consumers suggested that extensions with an apple scent and a new vitamin (vitamin E) would be credible and relatively incongruent products for Fructis. According to the typicality theory, an extension incongruent on one attribute (mixed fruity smell) is less incongruent than an extension incongruent on two attributes (vitamin E and apple scent). Thus, to investigate the relative effect of the number of incongruent attributes on the brand knowledge changes, an extension with apple scent was compared with an extension with apple scent and new vitamin E.

Incongruity as degree of attribute inconsistency

Fructis is characterized by a fruity scent. In the first pretest, consumers suggested that an apple scent would be slightly incongruent with the existing mixed fruit scent, and "perfumed" (non-fruity, non-natural) scent will be more incongruent with the existing scent. These suggestions were tested in the third pretest. The results demonstrated significant differences in the perception of the extension's incongruity for attributes in all product categories (Shampoo apple scent=2.27, perfumed scent=3.46 apple scent with vitamin E=3.93 ; shower gel apple scent=2.7 perfumed scent=4.4, apple scent with vitamin E=4.47). T statistics summarized in table 11.

Table 11: Stimuli Development: T Statistics

	T statistics
Shampoo apple scent versus apple scent with vitamin E	T=1.98 p=0.04
Shampoo apple scent versus perfumed scent	T=1.64 p=0.06
Shower gel apple scent versus apple scent with vitamin E	T=2.43 p=0.01
Shower gel apple scent versus perfumed scent	T=2.06 p=0.01
Shampoo versus shower gel apple scent	T=1.46 p=0.08
Shampoo versus shower gel apple scent with vitamin E	T=1.73 p=0.05
Shampoo versus shower gel perfumed scent	T=1.5 p=0.07

The importance of the attributes used for manipulations in the selected extension's categories was tested in the third pretest. The manipulated attributes were found to be equally important for consumers' evaluation of the extension's in proposed categories. The attributes were measured on a 7 point scale, where 1 - very important, 7- not important at all (the importance of the smell for shampoo = 1.47 shower gel =1.47; the importance of vitamin E shampoo = 1.8 shower gel = 1.53, $t = 0.59$ $p = 0.28$). The resulting extensions' manipulations used as stimuli for the main experiment is presented in Table 12.

Table 12: Stimuli Selected: Extension's Incongruity Operationalizations

Extension's Category Distance	Number of Incongruent attributes		Degree of Attribute Incongruity	
	1 incongruent attribute	2 incongruent attributes	Less incongruent	More Incongruent
Shampoo	Apple scent	With Vitamin E and Apple scent	Apple scent	Cosmetic scent
Shower gel Different basic Category	Apple scent	With Vitamin E and Apple scent	Apple scent	Cosmetic scent

Overall, 6 experimental stimuli were developed. 12 experimental groups were recruited to test the effect of developed brand extensions with 6 being primed in one way and 6 in another. Each group consisted of 30 subjects, and was presented with one experimental stimulus. Thus, the effect of different stimuli on the pattern of brand knowledge changes was compared across the experimental group in a between-subject design.

4.2 Overview

This research was undertaken to explore the effects of a brand extension's information on the parent brand knowledge under two different conditions. The study sample included 360 women between the ages of 18 to 49 familiar with the brand (Fructis) who received information about a fictitious new brand extension. The experiment was a 2X3X2 factorial design. The first factor was product type, with extensions described as being (1) in the same basic category as a current product offering by the company (Fructis shampoo) or (2) in a different basic category from current product offerings (Fructis shower gel). The second factor in the study design was type of information received, with extensions described at varying levels of two attributes that are associated with the family brand name. As a result, brand extensions are described as (1) a product with a new feature slightly inconsistent to the brand attribute (apple scent), (2) a product with two new brand inconsistent attributes (apple scent and new vitamin E), or (3) a product with a new more inconsistent to the brand attribute (perfumed non fruity scent). The third factor was priming conditions, which involved emphasizing the extension's similarity with the parent brand (1), or emphasizing the extension's difference from the brand (2). Before the brand associations were measured, half of the subjects completed an orienting task that primed the analysis of similarities between the extension and the brand, whereas the other half completed an orienting task that primed the analysis of difference between the brand and its extension. Finally, in order to make an appropriate comparison to assess brand knowledge changes, a control group that received no information about new brand extensions is included. Table 13 summarizes experimental design.

Experimental Design:

30 subjects per cell plus a control group (30 subjects)

Table 13: Experimental Design

Extension's Category Relatedness	PRIMING					
	<i>Difference between the parent brand and extension</i>			<i>Similarities between the parent brand and extension</i>		
	Number or degree of Attribute Inconsistency			Number or degree of Attribute Inconsistency		
	<i>1 slightly Inconsistent Attribute</i>	<i>2 Inconsistent Attributes</i>	<i>1 more Inconsistent Attribute</i>	<i>1 slightly Inconsistent Attribute</i>	<i>2 Inconsistent Attributes</i>	<i>1 more Inconsistent Attribute</i>
<i>Shampoo</i>	Apple scent	Apple scent with Vitamin E	Perfumed Non-fruity Scent	Apple scent	Apple scent With vitamin E	Perfumed Non-fruity Scent
<i>Shower gel</i>	Apple scent	Apple scent with Vitamin E	Perfumed Non-fruity Scent	Apple scent	Apple scent With vitamin E	Perfumed Non-fruity Scent

4.3 Dependent Measures

Existing measures from the consumer behaviour and social psychology literature were adopted to measure the cognitive structure of the brand knowledge. These measures are summarized in Table 14.

Measures of the overall attitude towards the brand

Aggregated measures of the overall attitude towards the brand were collected on two scales, following Aaker and Keller (1992) and Park, McCarthy and Milberg (1993).

Measures of brand beliefs

Multiple measures of brand beliefs were collected:

1) Trait ratings of the brand (Weber and Crocker, 1987)

These reflect the consumer perceptions of the brand: what attributes are characteristic, non-characteristic and irrelevant for the brand. These characteristics were first selected in the pretests, then collected from the control group and compared with the ratings of those in the experimental groups. (Each characteristic is measured on 7-point scale: not at all characteristic/very characteristic.)

2) Family brand beliefs about the focal attributes measured on 7-point scales

Fructis products are very (manipulated attribute). Answer options: strongly agree/strongly disagree; extremely likely/extremely unlikely; very probable/not at all probable.

Measures of constraint values

These measures reflect how much variability exists on the focal attributes among the brand's products (Sujan and Bettman, 1989). Variability was measured on two 7 point

scales (alpha=.94): (1= little variability/products are not at all different; 7= great variability/products are very different on this feature).

Incongruity measures

Typical-atypical of the Fructis brand image; Representative-Unrepresentative of the Fructis brand image. Similar- Dissimilar to Fructis brand image; Consistent-Inconsistent with Fructis brand image (Loken and Roedder John, 1993): Cronbach alpha correlation = 0.92); fits well together with other brand products – does not fit well together with other brand products (Romeo,1991).

Measures of processing

The thoughts regarding the extension were used as measure of processing. As has been described in the previous chapter different types of generated thoughts reflect different type of information processing. The thoughts generated by the consumers were classified using content analysis into the four categories that enabled to test the hypotheses regarding the type of information processing under investigation:

- 1) Extension's own information based thoughts – extensions characteristics related thoughts;
- 2) Brand based thoughts – the thoughts that are induced by the brand knowledge - generalization from the parent brand to the new product;
- 3) Thoughts considering the relationships between the new product and the brand;
- 4) Simple evaluative thoughts.

Table 14: Dependent Measures of Cognitive Brand Structure Changes

Measures of changes	Study	Operationalization of measures
Measures of overall attitude towards the brand	Aaker and Keller, 1992	Two 7-point scales (low quality/high quality, not at all likely to try/very likely to try)
	Park, McCarthy and Milberg, 1993 Overall evaluation	Overall attitude towards the brand (1 to 7 scale 2 measures summarized: 1= dislike/feel bad about it; 7=like/feel good about it, alpha = 0.78)
Measures of attribute structure	Loken, Roedder John, 1993	Family brand attribute beliefs 7-point scales
	Roedder John, Loken and Joiner, 1998	Brand A products are very (manipulated attribute): (strongly agree/strongly disagree; extremely likely/extremely unlikely; very probable/not at all probable, alpha =.92)
	Weber and Crocker, 1983	Trait ratings: Point scale not at all characteristic/very characteristic).
Measures of constraint values	Sujan and Bettman, 1989	Perceptions of variability among existing brand products on the focal attribute (1 to 7 scale 2 measures summarized (alpha=.94) 1 = little variability/products are not at all different on this feature; 7 = a great deal of variability/products are very different on this feature)

4.4 Sample and Procedure

Previous studies' pretests have shown that women are more familiar and more experienced with the shampoo product type than men are. Thus, similar to previous studies (Loken, Roedder John 1993; Roedder John, Loken and Joiner 1998) women were recruited as subjects. They were recruited by a market research firm in a mall-intercept study. Women familiar with the brand's products were between the ages of 18 and 49, with at least a high school education and a middle class household income were invited to participate. The average age of the sample was 34.5 years. The study was conducted in Russia, in Yaroslavl, and the experimental stimuli were in Russian. For this dissertation all experimental stimuli were translated into English by author.

Subjects were assigned randomly to one of the study conditions, and were given appropriate instructions. Subjects were told that the purpose of the interview was to learn "how people think about new products". The subjects were presented with a description of a product, and were told that it was already being on sale by Fructis in another part of the country, but that it would become available sometime soon in their area. Then a survey questionnaire was administered.

For the priming, subjects were divided into two groups: one in which the extension's similarities with the brand were primed, and another in which the differences between the extension and the brand were primed. In the differences primed conditions subjects were asked to consider how different the extension was from the brand and then completed information about the perceived extension's differences from the parent brand.

In the similarities primed conditions subjects were asked to consider how similar the extension is to the parent brand and then completed the information about extension's similarities with the parent brand. Then the subjects answered several questions about their brand beliefs about Fructis. Brand beliefs measures included:

- 1) Overall attitude towards the brand measured on two seven-point scales.
- 2) Attributes rating (the attributes that in the pretests were found to be characteristic of the brand). All ratings were made on a 7-point scale ranging from “not at all characteristic” to “very characteristic”.

The subjects also completed additional questions:

- 1) Product usage for current Fructis products,
- 2) Selected demographic characteristics (age, occupation).

Copies of the questionnaire are presented in Appendix 3.1 and 3.2.

A control group was also recruited to provide a baseline for comparison. This baseline was necessary to understand relative changes in brand knowledge when exposed to the extensions. Subjects in the control group were recruited in the same manner as those participating in the experimental conditions but were not presented with the extension information. They were told that the purpose of the study was to collect consumer's opinions about products, and were asked simply to fill out several questions in an attached survey². This survey contained the same measures as those included in the one for experimental subjects, with the exception of questions regarding extensions incongruity.

Subjects in experimental and control groups were presented with small gifts (pens) as a token of appreciation for their participation in the study.

5. DATA ANALYSIS

5.1 Manipulation check: Perceptions of Extension's Incongruity by Condition

Before testing the hypotheses, it was necessary to confirm that selected stimuli were perceived as being incongruent with the parent brand in the ways intended. Although pretests indicated that different stimuli were perceived as varying in the degree of incongruity from the parent brand, it was essential to confirm that the experimental subjects perceived the stimuli just as the pretest did.

Stimuli incongruity was measured on five seven point scales using the scales developed and validated by Loken and Roedder John 1989, and Romeo 1991. A factor analysis of the five scales indicated that the scales loaded on two different factors. The first factor combined measures of the extension's representativeness, consistency and good fit with other brand products. The second factor combined the measures of new product similarity and typicality of the parent brand. Thus, the first factor was considered as the measure reflecting complementarity of the new extension with the existing brand product and was excluded from further analysis.

The second factor was considered as a measure of extension's typicality/incongruity with the parent brand and was used for extension's incongruity evaluation. The total correlation of the items loaded on the second factor is 0.895. Figure 12 presents the evaluation of stimuli incongruity operationalized in three different ways:

- 1) number of incongruent attributes – a product with one incongruent attribute, apple scent (less incongruent extension) was compared to a product with two incongruent attributes, apple scent with vitamin E, (more incongruent extension);
- 2) degree of attribute incongruity – a product with more close new attribute, apple scent (less incongruent extension) was compared to a product with more distant new attribute, perfumed non-fruity scent (more incongruent extension);
- 3) category distance – line extension product, shampoo (less incongruent extension) was compared to an extension in a new product category, shower gel (more incongruent extension).

Table 15 provides the summary statistics on the differences in the stimuli perception for each operationalization of incongruity.

Figure 12: Extensions' Incongruity Evaluation

Figure 12.1: Incongruity operationalized as Number of Incongruent Attributes

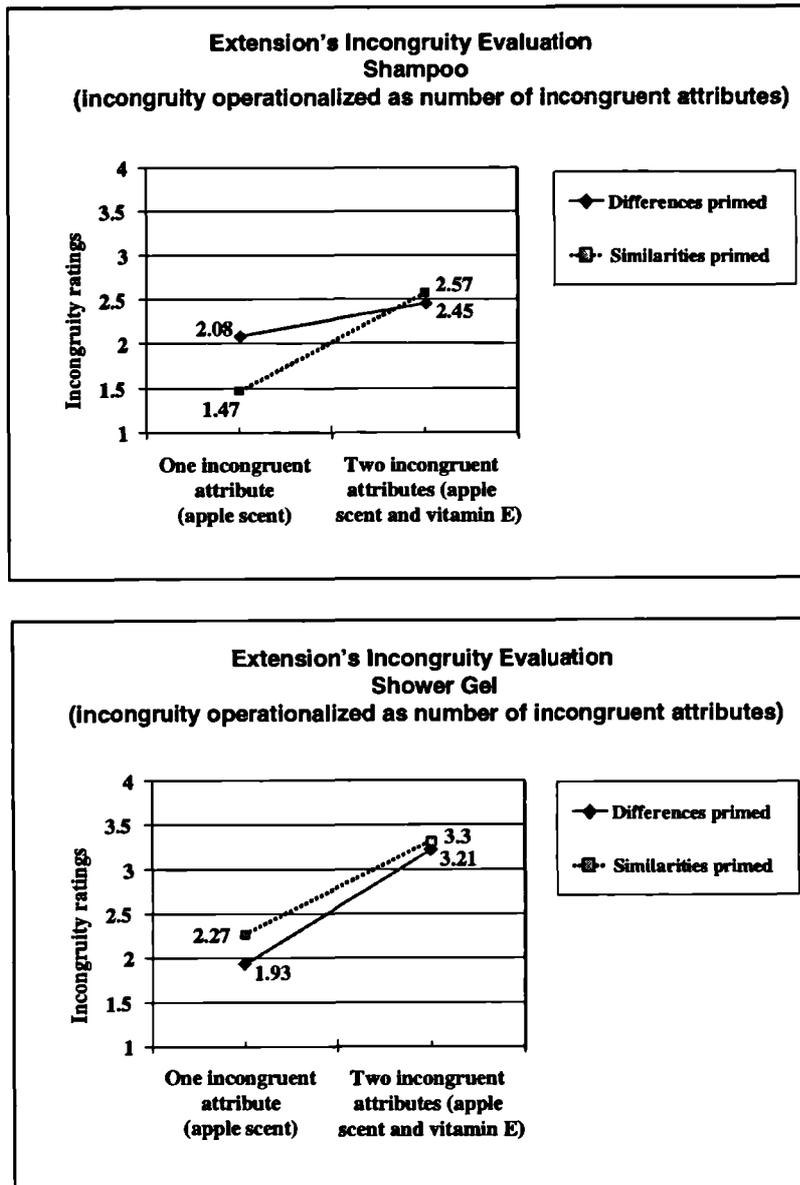


Figure 12.1 shows that subjects in both experimental conditions for both product categories rated extensions with two incongruent attributes as being more incongruent than extensions with one incongruent attribute.

Figure 12.2: Incongruity operationalized as Degree of Attribute Incongruity

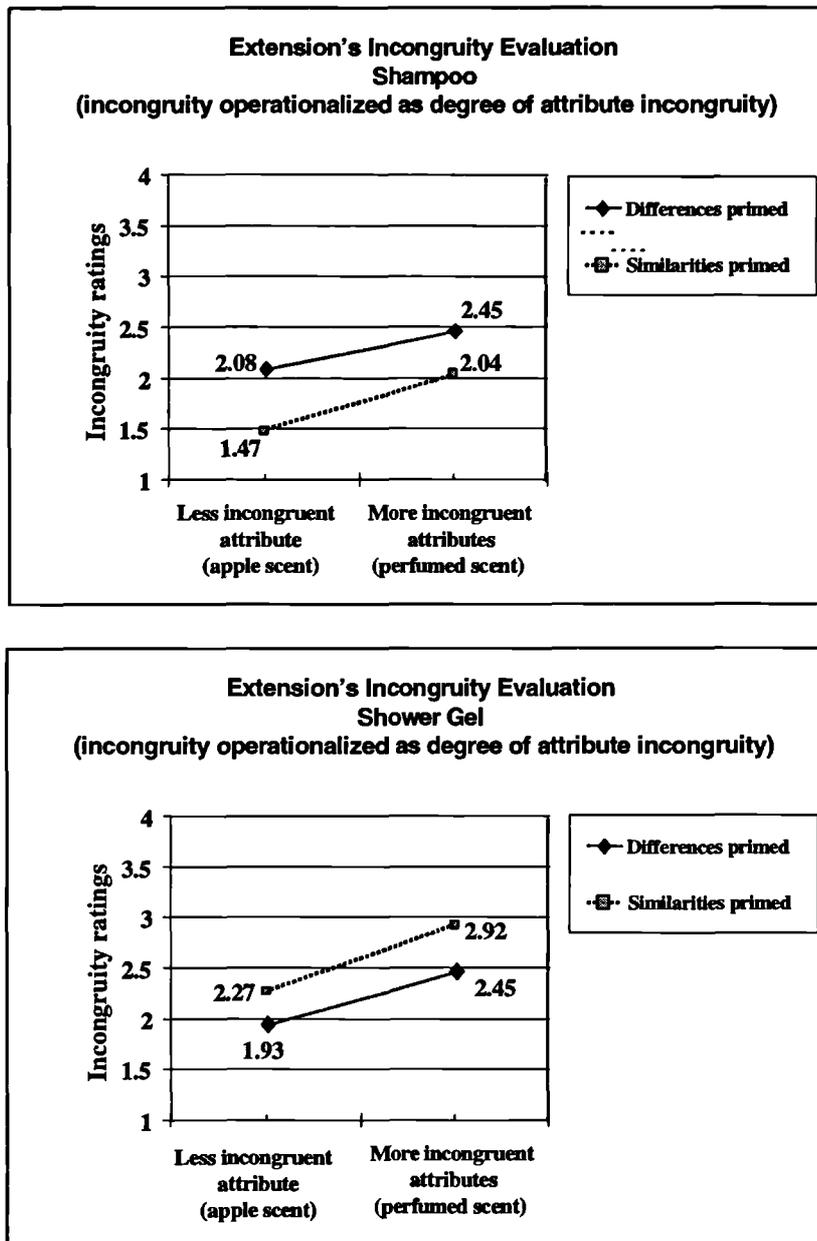


Figure 12.2 shows that subjects in both experimental conditions for both product categories rated extensions with an attribute that was more distant from the parent brand as being more incongruent than extensions with an attribute that was more close to the parent brand.

Figure 12.3: Incongruity Operationalized as Category Distance

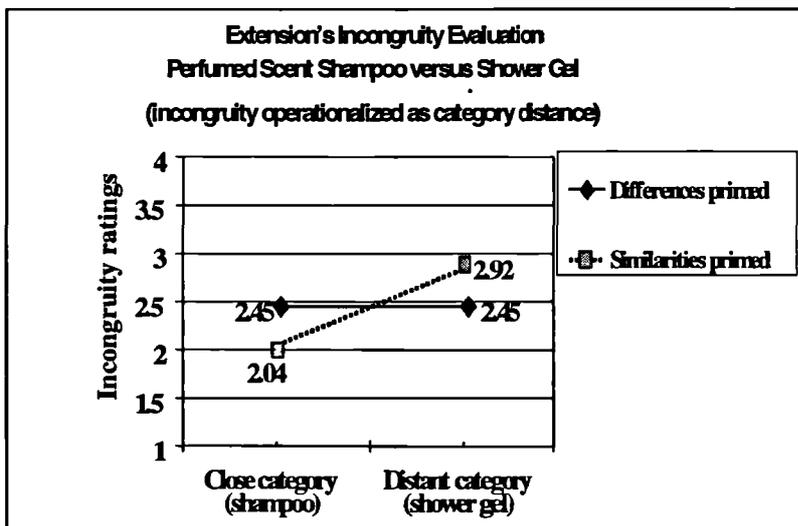
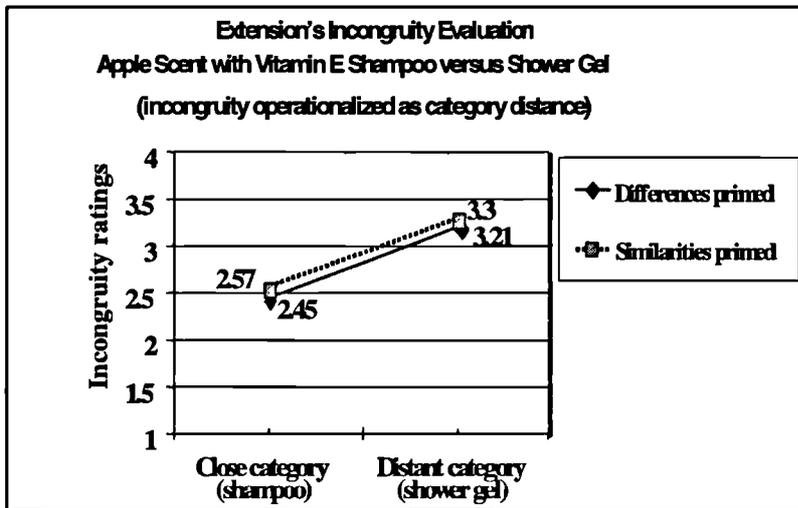
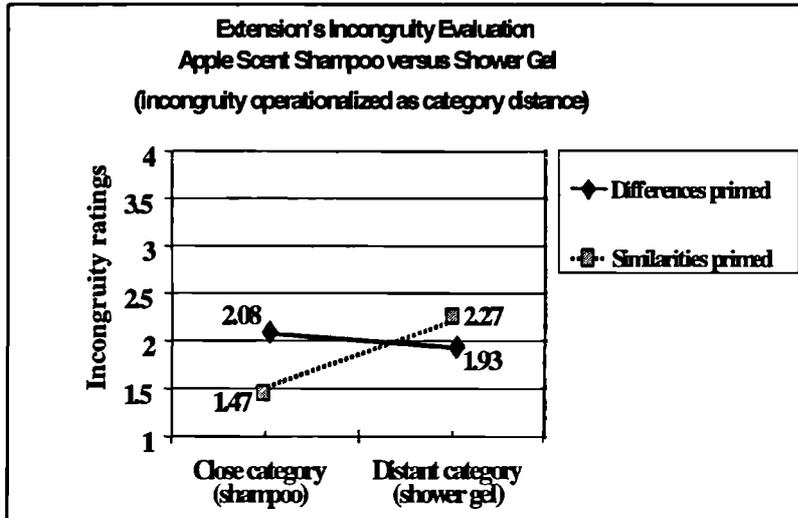


Figure 12.3 shows that subjects in the similarities-primed experimental conditions rated extensions in a category different from the parent as being more incongruent than extensions in a category the same as the parent. However, subjects in the differences-primed conditions did not see differences between the more distant and closer extensions. Table 15 provides the statistical comparison of means.

Table 15: Evaluation of Extensions' Incongruity with the Parent Brand

	Similarities Primed Condition				Differences Primed Condition			
	<i>Extension 1 Means</i>	<i>Extension 2 Means</i>	<i>T</i>	<i>P</i>	<i>Extension 1 Means</i>	<i>Extension 2 Means</i>	<i>T</i>	<i>P</i>
Operationalization of extension's incongruity: for each pair the first extension is compared to the second extension								
Shampoo apple scent versus shampoo apple scent with vitamin E	1.47	2.57	4.22	0.0001	2.08	2.45	1.9	0.03
Shampoo apple versus perfumed non fruit scent	1.47	2.04	1.69	0.05	2.08	2.45	1.6	0.06
Shower gel apple versus apple scent with vitamin E	2.27	3.3	3.52	0.0007	1.93	3.21	2.87	0.003
Shower gel apple versus perfumed non fruit scent	2.27	2.92	1.64	0.05	1.93	2.45	1.57	0.06
Shampoo apple scent versus shower gel apple scent	1.47	2.27	2.27	0.02	2.08	1.93	0.66	0.26
Shampoo apple scent with vitamin E versus shower gel apple scent with vitamin E	2.57	3.3	2.61	0.007	2.45	3.21	1.3	0.1
Shampoo apple scent with perfumed non fruity scent vs shower gel with perfumed non fruity scent	2.04	2.92	2.4	0.01	2.45	2.45	0.25	0.4

Table 15 shows that for the number of incongruent attributes the difference between the less distant and more distant extension reached the significance level under both experimental conditions. For differences primed conditions the single-attribute extensions (with apple scent, shampoo mean = 2.08; shower gel mean = 1.93) were judged to be less

incongruent than the double attribute extensions in the same product categories (with apple scent and vitamin E, shampoo mean = 2.45; shower gel mean = 3.21). Similarly, for similarities primed conditions the single-attribute extensions (with apple scent, shampoo mean = 1.47; shower gel mean = 2.27) were judged to be less incongruent than the double attribute extensions in the same product categories (with apple scent and vitamin E, shampoo mean = 2.57; shower gel mean = 3.3).

For the degree of attribute incongruity operationalization the difference between the less incongruent and more incongruent extension reached the significance level under both experimental conditions. For differences primed conditions the less distant attribute extensions (with apple scent, shampoo mean = 2.08; shower gel mean = 1.93) were judged to be less incongruent than the more distant attribute extensions in the same product categories (with perfumed scent, shampoo mean = 2.45; shower gel mean = 2.45). Similarly, for similarities primed conditions the less distant attribute extensions (with apple scent, shampoo mean = 1.47; shower gel mean = 2.27) were judged to be less incongruent than the more distant attribute extensions in the same product categories (with perfumed scent, shampoo mean = 2.04; shower gel mean = 2.92).

For the category distance incongruity operationalization the difference between less incongruent (shampoo) and more incongruent (shower gel) extensions reached significance when similarities were primed, and did not reach significance when differences were primed. For differences primed conditions: the pairs of compared extensions were perceived as equally incongruent: for extensions with apple scent (shampoo mean = 2.08,

shower gel mean = 1.93) ; apple scent with vitamin E (shampoo mean = 2.45; shower gel mean = 3.21); perfumed scent (shampoo mean = 2.45, shower gel mean = 2.45).

Differences primed conditions did not demonstrate the expected pattern. This might be due to the fact that two categories were very close to each other and when the subject's attention was directed to the extension's information (differences primed condition) the extensions' relationships to the brand became a nonsalient factor.

For similarities primed conditions: extension in the same category was perceived as less incongruent than extension in the more distant category: for apple scent extensions (shampoo mean = 1.47, shower gel mean = 2.27); for apple scent with vitamin E extensions (shampoo mean = 2.57; shower gel mean = 3.3); extensions with perfumed scent (shampoo mean = 2.04, shower gel mean = 2.92). Overall, 11 out 14 manipulations resulted in subject ratings as expected, which meant that overall stimuli manipulation was considered acceptable.

5.2 Results

This section reports the results of the study under two main headings:

- the effect of priming on the extension's information processing;
- the effect of priming on the pattern of brand knowledge changes.

5.2.1 The Effect of Priming on the Extension Information Processing

Hypotheses 1 and 2 test the conditions' effect on subjects' information processing of the extension. Hypotheses 1 and 2 are formulated to test proposition 1a. Hypothesis 1 proposed that conditions priming the extension's differences from the parent brand facilitate algebraic piecemeal processing which is characterized by the elementary analysis of extension's features, - thus a great number of extension's own information-based thoughts are expected to be generated. This differs from category-based processing, so fewer category-induced thoughts are expected. When the extension's differences from the parent brand are primed, more thoughts about the extension on its own are expected than thoughts about the parent brand.

Hypothesis 2 proposes that conditions priming the extension's similarities with the parent brand facilitate thoughtful piecemeal processing. This type of processing is characterised by the elementary analysis of the extension's features as well as by the larger number of thoughts considering the relationships between the brand and extension (relative to algebraic piecemeal processing). Thoughtful piecemeal processing differs from category-based processing, which is characterised by simple evaluative and category-induced thoughts. Thus, it is expected that, relative to algebraic piecemeal processing, thoughtful piecemeal processing generates fewer simple evaluative and category-induced thoughts.

These hypotheses were tested through a content analysis of the thoughts generated by respondents under each condition. Thoughts generated under different conditions were

classified by two coders (Russian female MBA students) into four different categories (Krippendorff alpha, the reliability coefficient, which shows how much the probability of agreement among coders is above agreement by chance, and varies from 0.57 to 1; only one coefficient out of twelve is below 0.6)². The judges were asked to classify thoughts into the four categories:

- 1) Extension's information-based thoughts – thoughts elaborating on extensions attribute or category.

For example, the following thoughts were classified into this category: “ I like apple scent”, “I would like the vitamin E in the product”, “I don't like shampoo with apple scent”, “I would prefer to have shower gel with peach smell”. These are extension's information-based thoughts because they are generated based on the information presented in extension only.

- 2) Fructis brand based thoughts – the thoughts generalizing from the parent brand to the new product, that are induced by pre-existing brand knowledge.

For example, the following thoughts were classified into this category: “If it's Fructis, it must be a good product,” “I don't like Fructis products, I would not buy a new one,” “Fructis products are not cheap relative to local products, so the new product must be expensive, and therefore I would rather buy a locally produced one”. These are brand-based thoughts because they are generated based on the information about the brand only.

- 3) Thoughts considering the relationships between the new product and the brand - the thoughts that take into account extension's information and consider its relationships to the parent brand information.

² The acceptable Krippendorff alpha is 0.6.

For example, the following thoughts were classified into this category: “It’s a very good product for Fructis, it’s another fruity scent shampoo”, “If the new Fructis shampoo has an apple scent, it would not be more similar to other brands than to Fructis”, “I like Fructis for its citrus smell, as therefore I would not buy an apple-smelling shampoo.” These are thoughts considering relationships between the new products and the parent brand because they are generated based on the comparison of the information between the brand and the extension.

- 4) Simple evaluative – the thoughts that express overall attitude towards the brand, the category, or the extension.

For example, the following thoughts were classified into this category: “I would like to buy this product”, and “I like trying new products”. These are simple evaluative thoughts because they express the overall attitude towards the brand, the category or the extension. The resulting classification for two manipulation conditions is presented by Figure 13.

Figure 13: Types of Thoughts Generated Under Different Priming Conditions

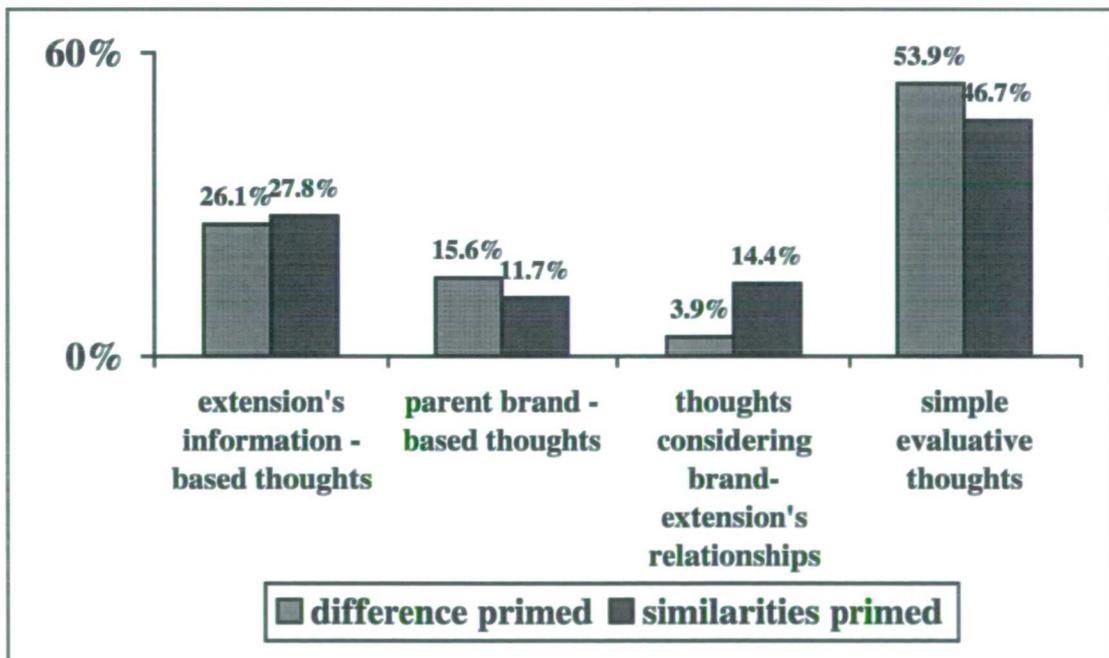


Figure 13 shows that under different priming conditions similar number of extension's information-based, parent brand based, and simple evaluative thoughts were generated. More thoughts considering brand extensions' information were generated under the similarities - primed conditions than under the differences - primed conditions. Tested below are the differences between the number of thoughts in each category across the manipulation conditions.

Hypothesis 1: When the extension's differences from the parent brand are primed, more extension's own information-based than parent brand-based thoughts are generated.

Overall, H1 was supported: more extension's own information-based than parent brand based thoughts were generated ($X_{ext} = 0.26$ $X_{par} = 0.16$ $t = 2.22$ $p = 0.014$). Table 16 provides the means for extension's own information-based and parent-based thoughts, and the t and p values for the comparison of these two types of thoughts.

Table 16: Differences Primed Conditions: An Extension's-Based versus Parent Brand Based Thoughts

	<i>Means Extensions' own information based thoughts</i>	<i>Means Parent brand based thoughts</i>	<i>T values</i>	<i>P values</i>
Overall	0.26 (0.19)	0.16(0.13)	2.22	0.01
a) Line extension with one slightly incongruent attribute	0.3 (0.22)	0.13 (0.12)	1.41	0.08
b) Line extension with two incongruent attributes	0.17 (0.14)	0.13 (0.12)	0.37	0.36
c) Line extension with one more incongruent attribute	0.27 (0.2)	0.13 (0.11)	1.16	0.12
d) Moderately incongruent extension with one slightly incongruent attribute	0.23 (0.19)	0.17 (0.14)	0.57	0.29
e) Moderately incongruent extension with two incongruent attributes	0.33 (0.23)	0.23 (0.19)	0.72	0.24
f) Moderately incongruent extension with one moderately incongruent attribute	0.27 (0.2)	0.18 (0.12)	1.16	0.12

* standard deviations are presented in the parentheses

Table 16 shows that hypotheses H1 a – f were not supported, the difference in means did not reach the significance level. However, the differences were in the expected direction – in each case, more extension's- based than parent brand based thoughts were generated. When the results for all different types and levels of incongruity were aggregated, H1 was supported: significantly more extension's own information-based than parent brand based thoughts were generated ($X_{ext} = 0.26$ $X_{par} = 0.16$ $t = 2.22$ $p = 0.014$).

Hypothesis 2: Priming the extension’s similarities with the parent brand facilitates thoughtful processing:

relative to the conditions when extensions differences with the parent brand are primed

H2a: the same number or more extension-based thoughts are generated;

H2b: more thoughts considering relationships between the parent brand and extension are generated;

H2c: fewer simple evaluative thoughts are generated.

H2d: fewer parent brand-based thoughts are generated

H2e: fewer evaluative and category based thoughts are generated

H2a: when the extension’s similarities with the parent brand are primed, the same number or more extension-based thoughts are generated, than when an extension’s differences from the parent brand are primed

Overall, H2a was supported : the same number of extension-related thoughts was generated under different conditions(Xdif = 0.26 Xsim = 0.28 t = 0.35 p = 0.37)

Table 17 summarizes the statistics for the comparison of an extension-related thoughts between the two experimental conditions for different types and levels of operationalizations of incongruity.

Table 17: Similarities versus Differences Primed Conditions Extension-Related Thoughts

	<i>Means Differences primed conditions</i>	<i>Means Similarities primed Conditions</i>	<i>T</i>	<i>P</i>
Overall	0.26 (0.19)	0.28(0.2)	0.35	0.37
1) Line extension with one slightly incongruent attribute	0.27 (0.2)	0.23 (0.19)	0.37	0.36
2)Line extension with two incongruent attributes	0.17 (0.14)	0.17 (0.14)	0	0.5
3) Line extension with one more incongruent attribute	0.27 (0.2)	0.23 (0.18)	0.37	0.36
4) Moderately incongruent extension with one slightly incongruent attribute	0.23 (0.19)	0.27 (0.2)	0.3	0.38
5) Moderately incongruent extension with two incongruent attributes	0.33 (0.23)	0.4 (0.25)	0.57	0.29
6) Moderately incongruent extension with one moderately incongruent attribute	0.27 (0.2)	0.3 (0.22)	0.33	0.37

Table 17 shows that hypotheses H2a 1 through 6 are supported. As predicted, there are no differences in the number of an extension-based thoughts generated under two conditions.

H2b: when extension's similarities with the parent brand are primed, more thoughts considering the relationships between the parent brand and the new extension were generated; than when extension's differences from the parent brand are primed

Overall, H2b was strongly supported: more thoughts considering the relationships between the parent brand and new extension were generated when similarities are primed (Xdif=0.038, Xsim=0.14 t=3.4, p<0.01).

Table 18 summarizes the statistics for the comparison of the thoughts considering the relationships between the brand and extension in the two experimental conditions for different types and levels of operationalizations of incongruity.

Table 18: Similarities versus Differences Primed Conditions Thoughts Considering the Relationships between the Brand and the Extension

	<i>Means Differences Primed Conditions</i>	<i>Means Similarities Primed Conditions</i>	<i>T</i>	<i>P</i>
Overall	0.04 (0.03)	0.14 (0.12)	3.4	0.01
1) Line extension with one slightly incongruent attribute	0.07 (0.06)	0.23 (0.19)	1.6	0.05
2) Line extension with two incongruent attributes	0	0.07 (0.07)	1.4	0.08
3) Line extension with one more incongruent attribute	0.03 (0.03)	0.13 (0.11)	1.3	0.09
4) Extension in new product category with one slightly incongruent attribute	0.1 (0.09)	0.23 (0.19)	1.4	0.08
5) Extension in new product category with two incongruent attributes	0.03 (0.03)	0.13 (0.12)	1.3	0.09
6) Extension in new product category with one moderately incongruent attribute	0	0.067 (0.06)	1.4	0.08

Table 18 indicates that hypotheses H2b1-6 were marginally supported. The differences between the means were in the right direction and approached the significance level. As predicted, more thoughts considering the relationships between the brand and extension were generated when the extensions' similarities with the parent brand were primed than when the differences were primed.

H2c: when an extension's similarities with the parent brand are primed, fewer evaluative thoughts are generated, than when an extension's differences from the parent brand are primed

Overall, H2c was marginally supported: fewer evaluative thoughts were generated when similarities were primed ($X_{dif} = 0.53$ $X = 0.46$ $t = 1.37$ $p = 0.08$).

Table 19 summarizes the statistics for the comparison of the simple evaluative thoughts between the two experimental conditions for different types and levels of operationalizations of incongruity.

Table 19: Similarities Primed versus Differences Primed Conditions Simple Evaluative Thoughts

	<i>Differences primed Conditions Means</i>	<i>Similarities primed Conditions Means</i>	<i>T</i>	<i>P</i>
Overall	0.53 (0.25)	0.46 (0.24)	1.37	0.08
Line extension with one slightly incongruent attribute	0.5 (0.26)	0.33 (0.22)	1.54	0.06
Line extension with two incongruent attributes	0.7 (0.22)	0.6 (0.23)	0.3	0.38
Line extension with one more incongruent attribute	0.56 (0.25)	0.46 (0.25)	0.77	0.22
Extension in a new product category with one slightly incongruent attribute	0.5 (0.26)	0.43 (0.25)	0.57	0.28
Extension in a new product category with two incongruent attributes	0.36 (0.24)	0.36 (0.24)	0	0.5
Extension in a new product category with one moderately incongruent attribute	0.6 (0.25)	0.56 (0.25)	0.25	0.4

Table 19 shows that hypotheses H2c 1 through 6 were not supported. The analysis of means between the conditions suggests that more simple evaluative thoughts were generated under the conditions when extension's differences from the brand were primed, than under the conditions when similarities between the brand and extension were primed. However, the difference between the means across the conditions was only approaching the statistical significance.

H2d: when extension's similarities with the parent brand are primed, fewer parent brand-based thoughts are generated, than when extension's differences from the parent brand are primed.

H2d was not supported: the same number of parent brand-based thoughts were generated under different conditions (Xdif=0.155 Xsim=0.116, t=1.21 p=0.13)

Table 20 summarizes the statistics for the comparison of the category-based thoughts between the two experimental conditions for different types and levels of operationalizations of incongruity.

Table 20: Similarities versus Differences Primed Conditions Category-based Thoughts

	<i>Means Differences primed Conditions</i>	<i>Means Similarities primed Conditions</i>	<i>T</i>	<i>P</i>
Overall	0.16 (0.13)	0.12(0.1)	1.21	0.13
Line extension with one slightly incongruent attribute	0.13 (0.12)	0.13 (0.11)	0	0.5
Line extension with two incongruent attributes	0.13 (0.12)	0.13 (0.12)	0	0.5
Line extension with one more incongruent attribute	0.13 (0.12)	0.17 (0.14)	0.37	0.36
Extension in a new product category with one slightly incongruent attribute	0.16 (0.14)	0.1 (0.09)	1	0.16
Extension in a new product category with two incongruent attributes	0.23 (0.19)	0.1 (0.09)	1.28	0.1
Extension in a new product category with one moderately incongruent attribute	0.13 (0.11)	0.06 (0.06)	0.8	0.2

Table 20 shows that more parent brand-based thoughts were generated under the conditions when an extension's differences from the brand were primed, than under the conditions when similarities between the brand and extension were primed. However, the difference of means between the conditions did not reach statistical significance, even in the aggregate.

H2e: when an extension's similarities with the parent brand are primed, fewer evaluative and category based thoughts are generated, than when extension's differences from the parent brand are primed

Overall, 2e was supported: when similarities were primed fewer evaluative and category based thoughts were generated than when differences were primed (Xdif=0.7 Xsim=0.58 t=2.1 p<0.05)

Table 21 summarizes the statistics for the comparison of the category- based thoughts between the two experimental conditions for different types and levels of operationalizations of incongruity.

Table 21: Similarities versus Differences Primed Conditions Evaluative and Category-Based Thoughts

	<i>Means Differences primed Conditions</i>	<i>Means Similarities primed Conditions</i>	<i>T</i>	<i>P</i>
Overall	0.7 (0.21)	0.58 (0.24)	2.1	0.02
Line extension with one slightly incongruent attribute	0.63 (0.24)	0.46 (0.25)	1.3	0.1
Line extension with two incongruent attributes	0.83 (0.14)	0.8 (0.25)	0.33	0.37
Line extension with one more incongruent attribute	0.7 (0.22)	0.63 (0.24)	0.57	0.29
Moderately incongruent extension with one slightly incongruent attribute	0.66 (0.23)	0.53 (0.26)	1.16	0.13
Moderately incongruent extension with two incongruent attributes	0.63 (0.25)	0.47 (0.26)	1.16	0.12
Moderately incongruent extension with one moderately incongruent attribute	0.73 (0.2)	0.63 (0.24)	0.9	0.18

Table 21 shows that hypotheses H2e 1-6 were not individually supported. The difference between the means (difference primed versus similarity primed conditions) at each level did not reach statistical significance. However the difference between the means was in the predicted direction and the overall

difference was significant. Overall, hypotheses H1 and H2 were supported. As predicted, under the differences primed conditions algebraic piecemeal processing was reinforced, whereas under the similarities primed conditions thoughtful piecemeal processing was reinforced.

Summary of results

Table 22 summarizes the results of hypotheses testing for hypotheses 1 and 2. These hypotheses were regarding the types of information processing under different experimental conditions.

Table 22: Summary of the Results for the Hypotheses Regarding the Types of Information Processing

	Hypotheses	Hypotheses
H1	When an extension's differences from the parent brand are primed, more extension's own information-based than parent brand based thoughts are generated.	+
H2-a	When an extension's similarities with the parent brand are primed, the same number or more extension-based thoughts are generated, than when an extension's differences from the parent brand are primed	+
H2 b	When an extension's similarities with the parent brand are primed, more thoughts considering the relationships between the parent brand and the new extension are generated; than when an extension's differences from the parent brand are primed	+
H2 c	When an extension's similarities with the parent brand are primed, fewer evaluative thoughts are generated, than when an extension's differences from the parent brand are primed	-
H2 d	When an extension's similarities with the parent brand are primed, fewer parent brand-based thoughts are generated, than when an extension's differences from the parent brand are primed.	-
H2 e	When an extension's similarities with the parent brand are primed, fewer evaluative and category based thoughts are generated, than when an extension's differences from the parent brand are primed.	+

As table 22 shows, overall, at the aggregated level, hypothesis one is supported. As predicted by hypothesis 1, priming the extension's differences from its parent brand activates algebraic piecemeal processing. (more "extension-based" than "parent-based" thoughts were generated). Hypotheses 2 a,b, and e are supported, hypotheses 2 c and d are not supported. As predicted by hypothesis 2, priming the extension's similarities with its parent brand activated thoughtful piecemeal processing. Relative to the conditions when the extension's differences with the parent brand are primed, priming extension's similarities with the parent brand results in:

- a) generation of the same number of extension-based thoughts;
- b) generation of more thoughts considering the relationships between the extension's characteristics and parent brand;
- c) generation of a smaller number of simple evaluative and parent brand-based thoughts (aggregated together).

In sum, the results supporting the first two hypotheses indicate that both types of priming lead to piecemeal processing. The results and their implications will be considered in more detail in the discussion section.

5.2.2 Priming Effect on the Pattern of Brand Knowledge Changes: testing for the models of brand knowledge changes under different conditions

Overall, this study examined the effect of three different operationalizations of incongruity on the brand knowledge changes:

- number of incongruent attributes;
- degree of attribute incongruity;
- category distance.

It has also tested the effect of two priming conditions on the brand knowledge changes:

- differences primed conditions;
- similarities primed conditions.

Before testing the specific hypotheses regarding the patterns of brand knowledge changes under each condition and alternative operationalizations of incongruity, general relationships between the manipulated variables were explored. The next section explores the main effects of operationalizations of incongruity, the main effects of priming conditions, and the interaction effects between operationalizations of incongruity and priming conditions. Sections 5.2.2.2, 5.2.2.3 and 5.2.2.4 test specific hypotheses regarding the patterns of brand knowledge changes under each priming condition.

5.2.2.1 Overall Main Effects of the Operationalizations of Incongruity, Priming Conditions and an Interaction Effect between Operationalization of Incongruity and Priming Conditions

It was expected that there would be statistically significant main effects of operationalizations of incongruity, priming conditions, and also an interaction effect between these two variables on two different measures of brand knowledge changes (changes in the strength of brand knowledge changes and changes in the overall attitude towards the brand).

The third measure of brand knowledge changes was the measure of attribute variability, which was borrowed from Sujan and Bettman (1989) and consisted of two seven point scale (1=little variability/products are not at all different; 7=great variability/products are very different on this feature, Sujan and Bettman (1989) $\alpha=.94$). However, in this study, subjects had difficulties responding to the questions on attitude variability, and seven percent of subjects even refused to answer these questions. Pearson's correlation coefficients for the scales were low for all associations and varied from $r=-0.43$ to $r=0.62$. Thus, the data obtained on attribute variability was excluded from further analysis.

The list of associations describing the brand was developed based on the interviews and pretests described earlier. It consisted of the twelve associations (make your hair gentle; high quality; fortifying; make your hair easy to comb; have gentle smell; are not trustworthy; have mixed fruit smell; are developed based on the advances in science and technology; have healthy treatment characteristics; are more suitable for consumers who look for product image rather than performance characteristics; make your hair shiny; are

more suitable for young people than for older people). The association strength was measured on four 7-point scales, where 1- means very characteristic of the brand, 7-not characteristic of the brand. The total correlation of the four scales for each association varied from 0.86 to 0.97 (Appendix 8). The strength of associations in the experimental conditions was compared to associations' strength in the control conditions, and the changes were analyzed using MANOVA. MANOVA analysis was applied because it allowed measuring the changes in all 12 associations simultaneously. The direction of changes was demonstrated using the changes of individual association and verified by the analysis of associations grouped in three factors. In addition, for further verification of the pattern of brand knowledge changes, individual associations were grouped in the three factors based on the results of factor analysis. The changes in the strength of associations by factor were analyzed. The associations' loadings by factor and correlations of individual associations attributed to each factor are presented in Appendix 8. The detailed results of analysis by factor are presented in Appendixes 9,10,11. The analysis by factor is not discussed in the body of the dissertation in detail, because the results are similar to the MANOVA analysis results. The relationships between the results of MANOVA analysis and factor analysis are considered in the discussion section.

Overall attitude towards the brand is measured on the four 7 point scales, where 1=low quality, not at all likely to try, dislike the brand; feel bad about the brand; 7=high quality, very likely to try, like the brand; feel good about the brand. The total correlation of the scales was 0.836.

The overall main effects of operationalizations of incongruity and main primed conditions effect for each operationalization of incongruity are presented in the tables 23,24 and 25.

Table 23: Incongruity Operationalized as Number of Incongruent Attributes

Effects	<i>Changes in associations' strength</i>		<i>Changes in the overall attitude towards the brand</i>	
	F values	P values	F values	P values
Main effect of incongruity	9.42	0.00	6.98	0.00
Main effect of priming conditions	3.63	0.00	1.8	0.18
Interaction effect between incongruity and priming conditions	11.86	0.00	12.2	0.00

Table 23 shows that, as expected, when incongruity is operationalized as a number of incongruent attributes, and the brand knowledge changes are measured as changes in associations' strength, there are statistically significant main effects of incongruity, priming conditions and an interaction effect between these two variables. When brand knowledge changes are measured as changes in the overall attitude there is a statistically significant main effect of incongruity, and an interaction effect between incongruity and priming conditions. However, inconsistently with the predictions, the main effect of priming conditions is not statistically significant. These results suggest that the overall attitude is more resistant to change than strength of associations.

Table 24: Incongruity Operationalized as Degree of Incongruent Attributes

Effects	<i>Changes in associations' strength</i>		<i>Changes in the overall attitude towards the brand</i>	
	F values	P values	F values	P values
Main effect of incongruity	8.13	0.00	4.89	0.03
Main effect of priming conditions	3.74	0.00	0.58	0.45
Interaction effect between incongruity and priming conditions	9.33	0.00	7.01	0.01

Table 24 shows that, as expected, when incongruity is operationalized as degree of attribute incongruity, and the brand knowledge changes are measured as changes in associations' strength, there are statistically significant main effects of incongruity, priming conditions and an interaction effect between these two variables. When brand knowledge changes are measured as changes in the overall attitude there is a statistically significant main effect of incongruity and an interaction effect between incongruity and priming conditions. However, inconsistently with the predictions, the main effect of the priming conditions is not statistically significant. Similarly to the results of the previous analysis (when incongruity was operationalized as the number of incongruent attributes), the results of this analysis suggest that the overall attitude is more resistant to change than strength of associations.

Table 25: Incongruity Operationalized as Category Distance

Effects	<i>Changes in associations strength</i>		<i>Changes in the overall attitude towards the brand</i>	
	F values	P values	F values	P values
Main effect of incongruity	4.31	0.00	1.29	0.26
Main effect of priming conditions	5.48	0.00	6.18	0.01
Interaction effect between incongruity and priming conditions	3.81	0.00	3.46	0.06

Table 25 shows that, as expected, when incongruity is operationalized as category distance, and the brand knowledge changes are measured as changes in associations' strength, there are statistically significant main effects of incongruity, priming conditions and an interaction effect between these two variables. When brand knowledge changes are measured as changes in the overall attitude there is a statistically significant main effect of priming conditions. The interaction effect between incongruity and priming conditions is only approaching statistical significance. Inconsistently with expectations, the main effect of incongruity is not statistically significant. Consistently with the results obtained on other operationalizations of incongruity, these results suggest that the overall attitude is more resistant to change than strength of associations.

In summary, tables 23, 24 and 25 present the general analysis of the main effects of three different types of operationalization of incongruity between the brand and extension, the main effects of priming conditions, and the interaction effects between the operationalizations of

incongruity and priming conditions. The results show that as predicted there are statistically significant main effects of extension's incongruity and priming conditions, as well as the interaction effects between these two variables when incongruity is measured as changes in associations' strength.

However, these effects are less consistent when brand knowledge changes are measured as changes in the overall attitude towards the brand. This pattern of results suggests that overall attitude towards the brand is a more resistant aspect of brand knowledge than strength of individual associations. Main effects of incongruity and priming conditions as well as interaction effects between these two variables for each operationalization of incongruity are examined in more detail in the next three sections. These sections test the specific hypotheses of this study regarding the patterns of brand knowledge under each priming condition.

Hypotheses 3, 4 and 5 are advanced to test the pattern of brand knowledge changes under two different conditions (similarities primed and differences primed) for three different operationalizations of incongruity between the brand and extension (number of incongruent attributes, degree of attribute incongruity and category distance). These hypotheses were tested on two different measures of changes (changes of association strength and changes of the overall attitude towards the brand). The results of these analyses are presented in the next three sections.

5.2.2.2 Differences Primed Condition: testing for “bookkeeping” pattern of changes

Proposition 2a suggests that different operationalizations of incongruity cause similar patterns of brand knowledge changes. Subjects in the differences primed conditions are expected to show the bookkeeping pattern of brand knowledge changes, while subjects in the similarities primed conditions are expected to show the typicality-based pattern of brand knowledge changes. This proposition is tested by hypotheses 3 and 4. Two types of dependent measures—changes of associations’ strength and overall attitude were analyzed.

Hypothesis 3: when an extension’s differences from the parent brand are primed more discrepant extensions cause more changes in brand knowledge than less discrepant extensions do.

H3 holds for:

- 1): line extensions when incongruity operationalized as number of inconsistent attributes;
- 2): the extensions in the moderately discrepant product category incongruity operationalized as number of inconsistent attributes;
- 3): line extensions when incongruity operationalized as degree of attribute inconsistency;
- 4): the extensions in the moderately discrepant product category when incongruity operationalized as degree of attribute inconsistency;
- 5) line extensions versus moderately discrepant extensions with one inconsistent attribute;
- 6): line extensions versus moderately discrepant extensions with two inconsistent attributes;
- 7): line extensions versus moderately discrepant extensions with moderate degree of attribute inconsistency.

Hypotheses 3.1 through 3.7 were supported when the dependent measures were changes in brand associations. As predicted, when the extension’s differences from its parent brand are primed, brand knowledge changed according to the bookkeeping model: more discrepant extensions caused more changes in brand knowledge than less discrepant extensions did. Hypotheses 3.1 through 3.7 were not supported when the dependent measure was change in the overall attitude. Changes in the overall attitude were in the predicted direction, but did not reach the significance level. The pattern of brand knowledge changes is illustrated by Figure 14, where the pattern for one of the associations (fortifying) is used to illustrate the pattern for all associations. The means for associations’ strength and overall attitude are presented in Appendix 4 and Appendix 5.

Figure 14: Differences Primed Conditions: Changes in Associations' Strength and Attitude

Figure 14 1: Incongruity operationalized as a number of incongruent attributes

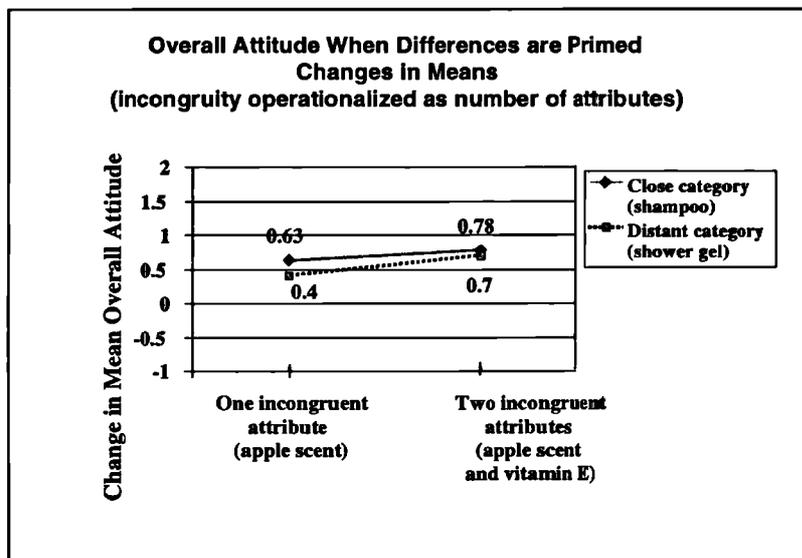
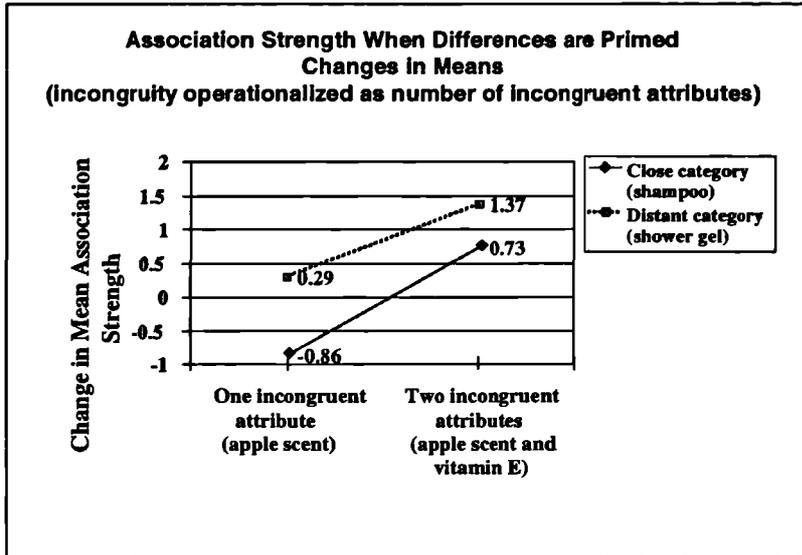


Figure 14.1 shows that, under the differences primed conditions, when incongruity is operationalized as a number of incongruent attributes, the more incongruent extensions cause more changes than the less incongruent extensions do for both measures of brand knowledge changes.

Figure 14 2: Incongruity operationalized as degree of attribute incongruity

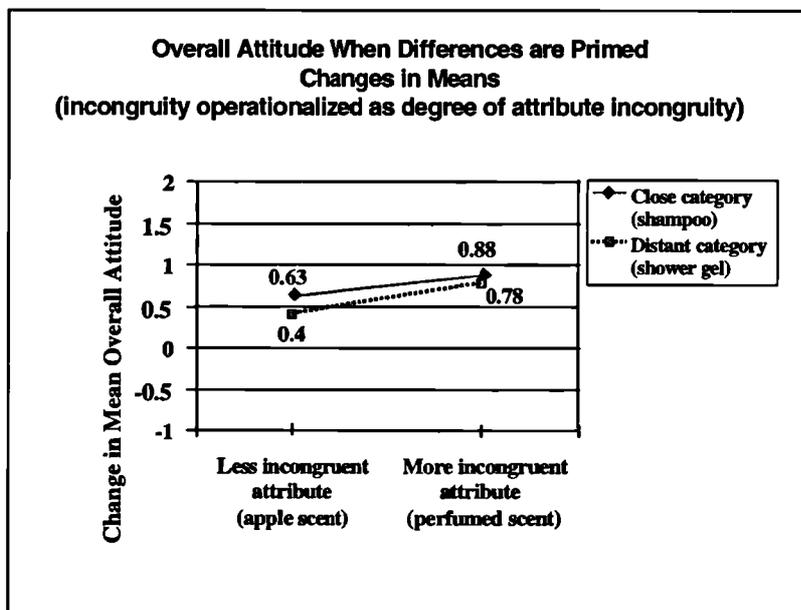
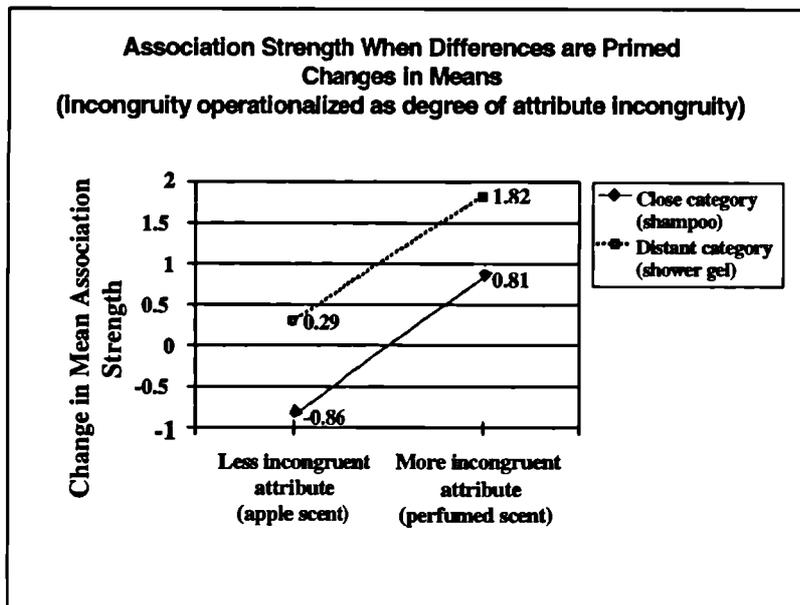


Figure 14.2 shows that, under the differences primed conditions, when incongruity is operationalized as a degree of attribute incongruity, the more incongruent extensions cause more changes than the less incongruent extensions do for both measures of brand knowledge changes.

Figure 14 3: Incongruity operationalized as category distance

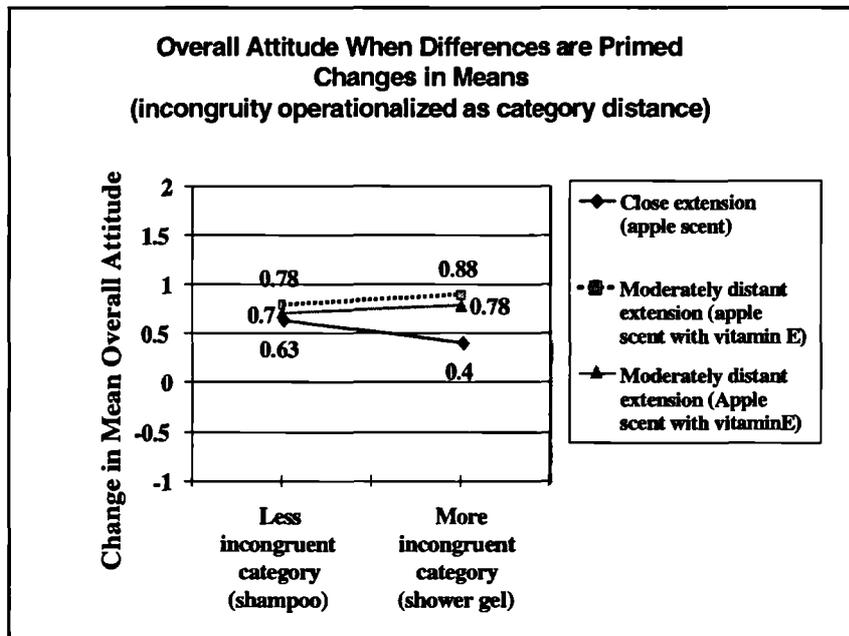
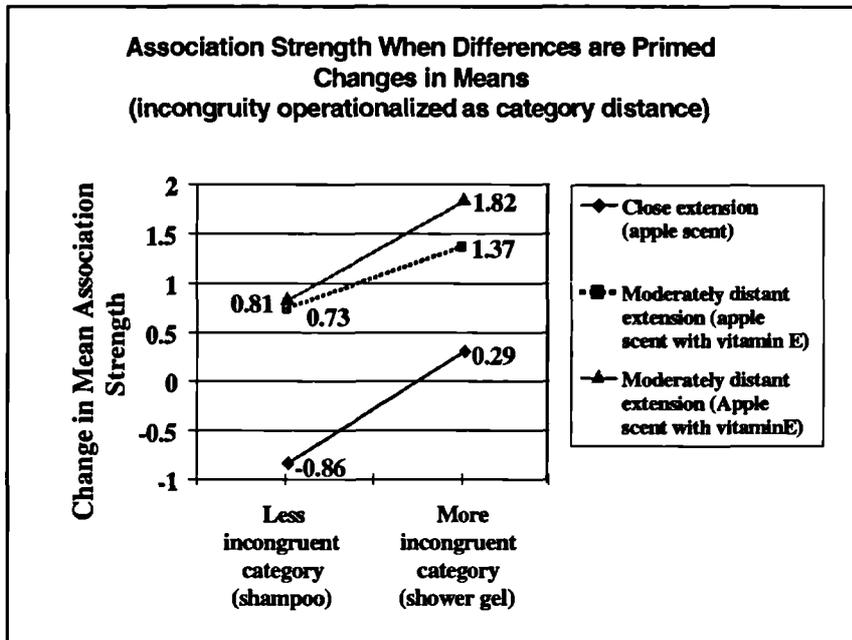


Figure 14.3 shows that, under the differences primed conditions, when incongruity is operationalized as category distance, the more incongruent extension causes more changes than the less incongruent extension does for both measures of brand knowledge changes. The exception is the overall attitude measure for shampoo versus shower gel apple

scent, which showed the opposite pattern, where shampoo, the more close extension, caused more changes than shower gel, the more distant extension. However, as one can see in the Table 23 the difference was not statistically significant).

Additional analysis (changes of associations grouped in factors) provided more insights on the brand knowledge changes under different operationalizations of incongruity (Appendix 9.1). When incongruity was operationalized as the number of incongruent attributes or degree of attribute incongruity, the means of factors demonstrated the predicted bookkeeping pattern of brand knowledge changes. Most of the compared pairs reached significance level (9 out of 12). When incongruity was operationalized as the category distance, the means of factors demonstrated the predicted bookkeeping pattern of brand knowledge changes, but most of the extensions' effects were not statistically significant (5 out of 9). Moreover, one of the groups of associations (the trustworthy factor apple scent) changed according to the typicality-based model (opposite to the direction predicted). Consumers had more trust in the close apple scent shampoo extension than in more distant apple scent with vitamin E shampoo.

Low significance for the factors on the category distance might be explained by a lack of difference in the typicality perceptions across the categories under the condition when an extension's differences from the parent brand are primed: shampoo and shower gel were perceived as very similar extensions under incongruity primed condition (Table 15). The opposite to the predicted changes in the shampoo extension trustworthy factor might be explained by the fact that Russian consumers are exposed to a great number of counterfeit

products, and thus have developed hypersensitivity to the product trustworthiness. It is possible that product trustworthiness is extremely natural salient factor, which activates typicality-based evaluation: consumers have more trust in the brand when it extends in the very similar products to the ones already produced by the brand.

Summary of results

Table 26 provides the significance data for the differences in means for analyzed pairs of extensions.

Table 26: Differences Primed Condition - Main Effects – Pattern of Brand Knowledge Changes

H3		<i>MANOVA</i> <i>Overall associations strength</i>		<i>Overall attitude</i>	
		<i>F values</i>	<i>P values</i>	<i>F values</i>	<i>P values</i>
1	Shampoo apple scent versus apple scent with vitamin E	3.07	0.00	0.04	0.84
2	Shower gel apple scent versus apple scent with vitamin E	4.89	0.00	1.15	0.29
3	Shampoo apple scent versus perfumed scent	3.25	0.00	0.22	0.64
4	Shower gel apple scent versus perfumed scent	17.37	0.00	0.16	0.69
5	Shampoo versus shower gel apple scent	4.54	0.00	0.45	0.5
6	Shampoo versus shower gel apple scent with vitamin E	1.97	0.05	0.05	0.82
7	Shampoo versus shower gel apple scent versus perfumed scent	7.5	0.00	0.17	0.68

Table 26 shows that hypothesis 3 was supported for the brand knowledge changes measured as changes in associations strength for different operationalizations of

incongruity considered, and was not supported for the brand knowledge changes as changes in the overall attitude towards the brand.

Figure 14 shows that, as predicted by hypothesis 3, when the extension's differences from the parent brand were primed, the more incongruent extension caused more changes in brand knowledge than less incongruent extension did. The patterns of brand knowledge changes were in the direction predicted by hypothesis 3 for both measures of brand knowledge changes - changes in the associations' strength and changes in the overall attitude. The only directional exception was changes in the overall attitude of shampoo versus shower gel apple scent, which did not reach the significance level.

5.2.2.3 Similarities Primed Condition: testing for “typicality-based” pattern of changes

Hypothesis 4: when an extension’s similarities with the parent brand are primed, more discrepant extensions cause less strong changes in brand knowledge than less discrepant extensions do.

H4 holds for:

- 1): line extensions when incongruity operationalized as number of inconsistent attributes;
- 2): the extensions in the moderately discrepant product category incongruity operationalized as number of inconsistent attributes;
- 3): line extensions when incongruity operationalized as degree of attribute inconsistency;
- 4): the extensions in the moderately discrepant product category when incongruity operationalized as degree of attribute inconsistency;
- 5) line extensions versus moderately discrepant extensions with one inconsistent attribute;
- 6): the line extensions versus moderately discrepant extensions with two inconsistent attributes;
- 7): the line extensions versus moderately discrepant extensions with moderate degree of attribute inconsistency.

Overall, hypothesis 4 was supported for the brand associations strength for all operationalizations of incongruity. They were not supported for changes in the overall attitude for most operationalizations of incongruity, except for line extensions and moderately incongruent extensions when incongruity was operationalized as the number of incongruent attributes. However, the pattern of brand knowledge changes for the overall attitude changes was in the direction predicted by hypothesis 4, though it did not reach the significance level.

As predicted by hypothesis 4, when the extension’s similarities with its parent brand were primed, the pattern of brand knowledge changes follows the typicality-based model: the more discrepant extension caused less strong changes in brand knowledge than the less discrepant extension did. The pattern of brand knowledge changes is illustrated by Figure 15, where the pattern for one of the associations (fortifying) is used to illustrate the pattern for all associations. Appendix 6 and Appendix 7 provide the means and changes in means for the associations’ strength and the overall attitude.

Figure 15: Similarities Primed Conditions: Changes in Associations' Strength and Attitude

Figure 15 1: Incongruity operationalized as a number of incongruent attributes

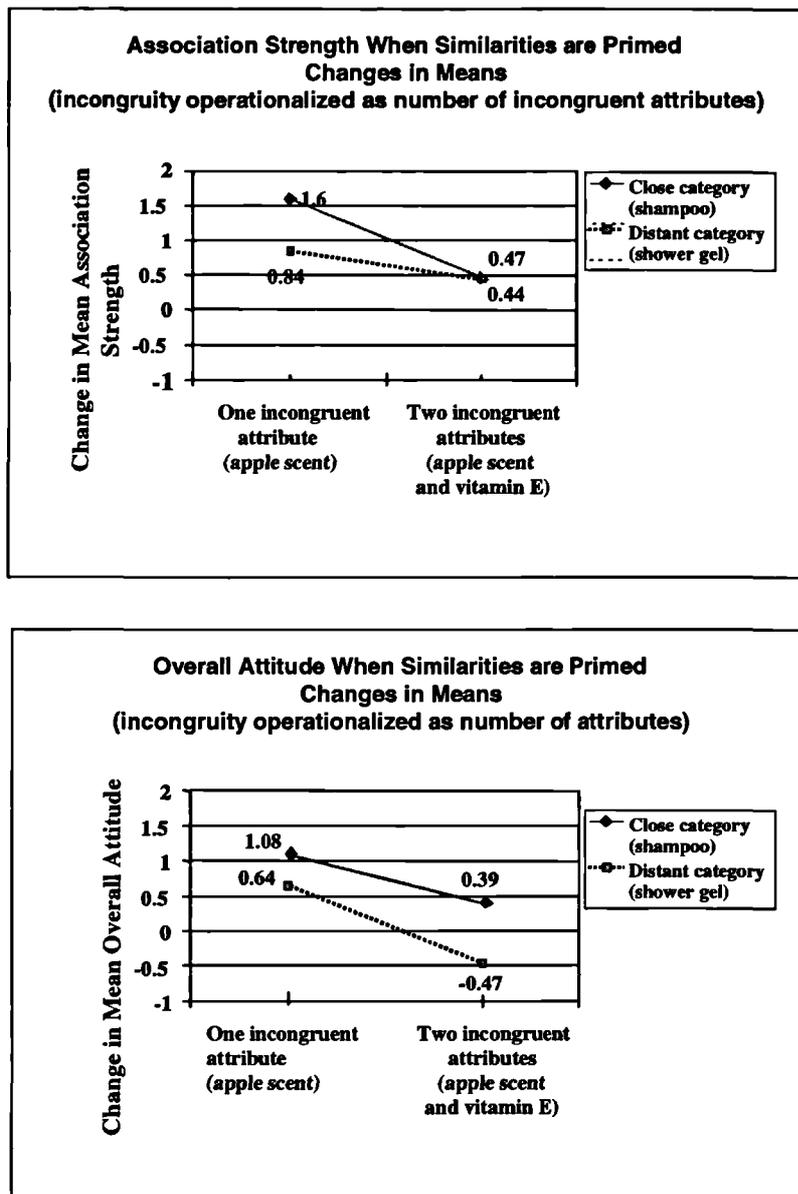


Figure 15.1 shows that under the similarities primed conditions, when incongruity is operationalized as number of incongruent attributes, the less incongruent extension causes more changes than the more incongruent extension does for both measures of brand knowledge changes.

Figure 15 2: Incongruity operationalized as degree of attribute incongruity

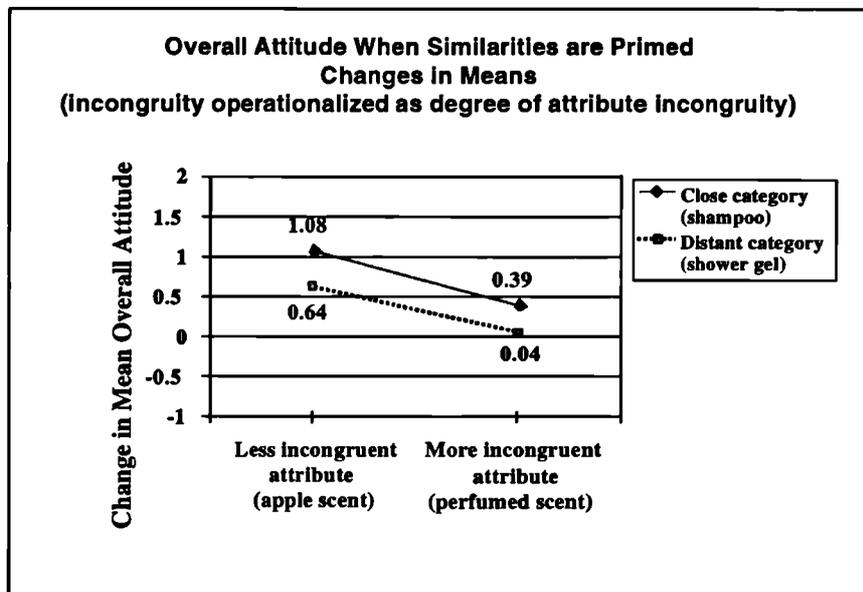
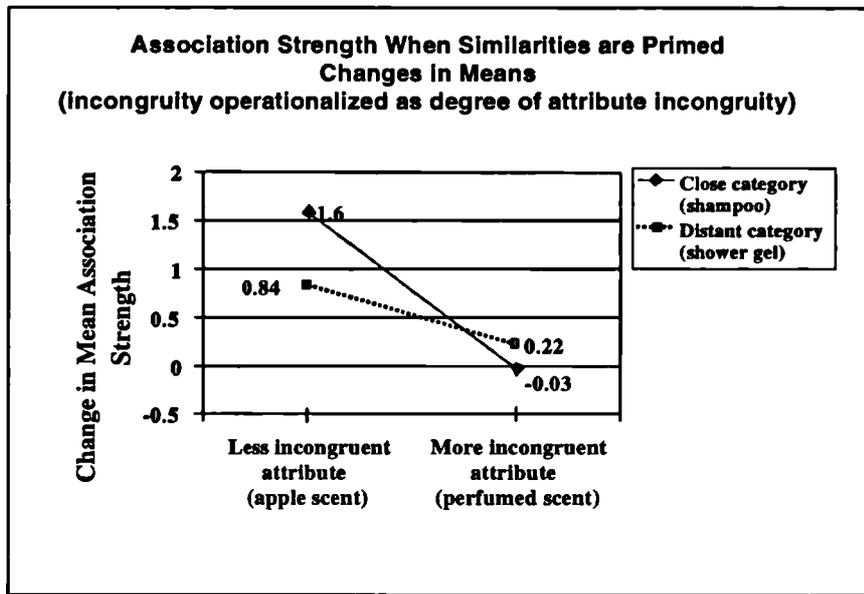


Figure 15.2 shows that, under the similarities primed condition when incongruity is operationalized as a degree of attribute incongruity, the less incongruent extension causes

more changes than more incongruent extension does for both measures of brand knowledge changes.

Figure 15 3: Incongruity operationalized as category distance

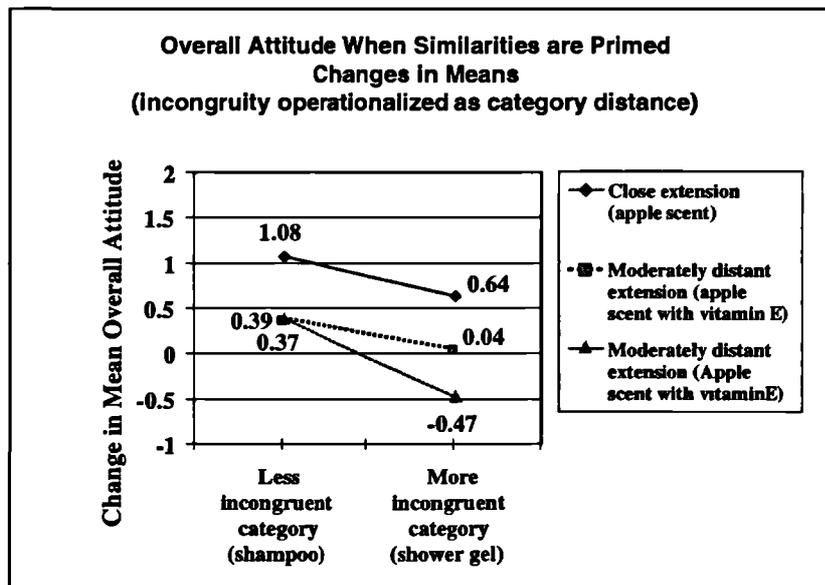
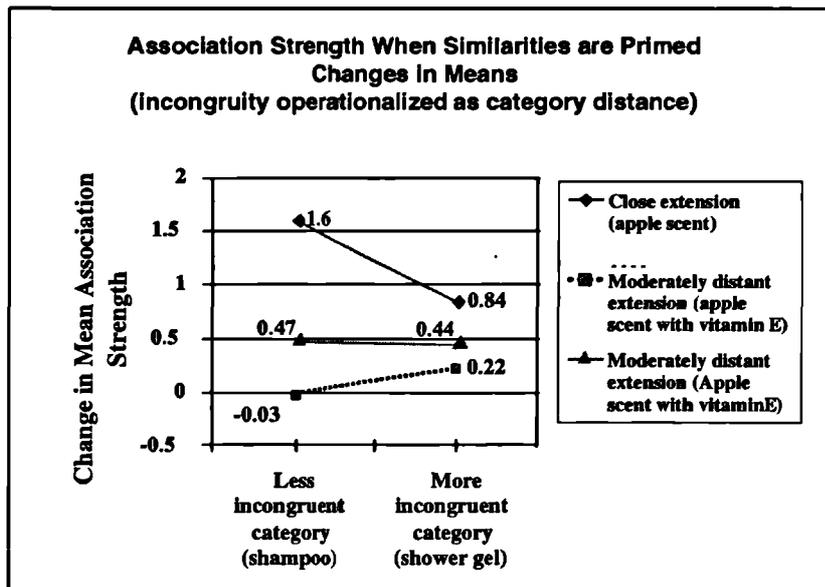


Figure 15.3 shows that, under the similarities primed conditions, when incongruity is operationalized as category distance, the less incongruent extension causes more changes than the more incongruent extension does for both measures of brand knowledge changes.

Additional analysis of associations grouped in factors strongly supported the hypothesis for two operationalizations of incongruity: the number of incongruent attributes and the degree of attribute incongruity (Appendix 9.2). The changes are in the predicted direction and reached the significance level for all pairs of extensions compared. Analysis of individual associations grouped in factors showed that along the category distance operationalization of incongruity the results are in the predicted direction consistent with the typicality-based model, but did not reach the significance level.

Summary of results

Table 27 summarizes the results for testing hypotheses 4.

Table 27: Similarity Primed Condition - Main Effects – Pattern of Brand Knowledge Changes

H4		MANOVA Overall associations F values		Overall attitude F values	
		F values	P values	F values	P values
1	Shampoo apple scent versus apple scent with vitamin E	10.22	0.00	5.67	0.21
2	Shower gel apple scent versus apple scent with vitamin E	6.99	0.00	13.25	0.00
3	Shampoo apple scent versus perfumed scent	11.27	0.00	2.5	0.12
4	Shower gel apple scent versus perfumed scent	4.62	0.00	2.5	0.12
5	Shampoo versus shower gel apple scent	2.4	0.03	1.63	0.21
6	Shampoo versus shower gel apple scent with vitamin E	4.53	0.00	12.82	0.00
7	Shampoo versus shower gel perfumed scent	3.49	0.00	0.46	0.5

Table 27 shows that hypothesis 4 was supported for the brand knowledge changes measured as changes in association strength for different operationalizations of incongruity considered, and was not supported for most of the brand knowledge changes as changes in the overall attitude toward the brand.

Figure 15 shows that, as predicted by hypotheses 4, when the extension's similarities with the parent brand were primed, the more discrepant extension caused less strong changes in brand knowledge than less discrepant extension did. The pattern of brand knowledge changes were in the direction predicted by hypothesis 4 for both measures of brand knowledge changes - (changes in the associations strength and changes in the overall attitude).

In sum, tables 26 and 27 show that hypotheses 3 and 4 were supported for all operationalizations of incongruity when the brand knowledge changes were measured as changes in the associations' strength.

Hypotheses 3 and 4 were not supported for most operationalizations of incongruity when the brand knowledge changes were measured as overall attitude changes. However, the graphical illustration of pattern of changes suggests that the patterns of the overall attitude changes were in the same directions as the pattern of changes of association strength.

As predicted by hypothesis 3, these patterns show that when differences between the extension and parent brand were primed, the more incongruent extensions caused more changes. In contrast, as predicted by hypotheses 4, when similarities between the extension and the parent brand were primed, the more close extensions caused more changes.

5.2.2.4 Extension's Incongruity - Condition Interaction Effect

Hypotheses 3 and 4 predict opposite patterns of brand knowledge changes under different conditions, which points to an interaction effect between the changes of associations. These interaction effects were expected for all different operationalizations of incongruity, and are tested below.

There is an interaction effect between the priming conditions and the levels of extensions' incongruity for.

- 1): line extensions when incongruity operationalized as number of inconsistent attributes;
- 2): the extensions in the moderately discrepant product category incongruity operationalized as number of inconsistent attributes;
- 3): line extensions when incongruity operationalized as degree of attribute inconsistency;
- 4): the extensions in the moderately discrepant product category when incongruity operationalized as degree of attribute inconsistency;
- 5) line extensions versus moderately discrepant extensions with one inconsistent attribute;
- 6): the line extensions versus moderately discrepant extensions with two inconsistent attributes;
- 7): the line extensions versus moderately discrepant extensions with a moderate degree of attribute inconsistency.

The significant interaction effects were found for associations' changes, and were not found for most of the overall attitude changes measures.

Appendix 10.1 illustrates the interaction effects between the priming conditions and the extension's incongruity. The fortifying association changes are used as an example. A MANOVA analysis shows that all the interaction effects were significant.

Appendix 10.2 shows the interaction effects for the overall attitude changes. Most of them were not significant. Some significant interactions were found for the overall attitude changes measures (shower gel apple scent versus apple scent with vitamin E, and shampoo versus shower gel for apple scent with vitamin E). This is due to the fact that

there was a strong significant main conditions' effect for the shower gel apple scent with vitamin E extension. Other overall attitude changes were in the predicted direction, but did not reach the significance level, which again confirms their lower sensitivity (relative to the measures of associations strength) reflecting the brand knowledge changes.

Additional analysis for the associations grouped in factors demonstrated the significant interactions (Appendix 11.1 –11.3). The single exception is trustworthy image factor for shampoo versus shower gel apple scent with vitamin E that did not show the interaction effect for trustworthy factor. This is due to the fact that there was no difference in the extension's impact on the parent brand trustworthy between the similarities versus differences primed conditions (no conditions effect) for both shampoo and shower gel extensions.

Summary of results

The interaction effects on different measures are summarized by table 28.

Table 28: Summary of Interaction Effects

		<i>MANOVA associations</i>		<i>Overall attitude</i>	
1	Shampoo apple scent versus apple scent with vitamin E	3.6	0.00	1.74	0.16
2	Shower gel apple scent versus apple scent with vitamin E	4.38	0.00	5.85	0.00
3	Shampoo apple scent versus perfumed scent	5.44	0.00	1.21	0.3
4	Shower gel apple scent versus perfumed scent	5.53	0.00	2.1	0.1
5	Shampoo versus shower gel apple scent	3.96	0.00	1.35	0.36
6	Shampoo versus shower gel apple scent with vitamin E	5.04	0.00	8.06	0.00
7	Shampoo versus shower gel apple scent versus perfumed scent	6.13	0.00	2	0.12

Table 28 shows that, as predicted, there were interaction effects between the pattern of brand knowledge changes under the conditions when the extension's similarities with the parent brand were primed and differences with the parent brand were primed. When the changes of brand knowledge structure were measured as changes in the strength of associations, the interaction effects were significant for all operationalizations of incongruity. In contrast, when the changes of brand knowledge structure were measured as changes in the overall attitude, only three out of seven tested levels of operationalizations of incongruity demonstrated statistically significant interaction effects.

5.2.2.5 Conditions Main Effect – Similarities versus Differences Primed Conditions

Proposition 1a and 1b consider the expected difference in stimuli evaluation under two different conditions (similarities primed/differences primed). These propositions are designed as an additional test to examine whether, when the similarities are primed it leads to the typicality-based stimuli evaluation, while when incongruity is primed, it leads to the bookkeeping type of evaluation. These propositions are tested by hypothesis 5.

Hypothesis 5a: when similarities between the brand and extension are primed, less incongruent extensions cause stronger brand knowledge changes than under conditions when differences between the brand and extension are primed:

1. H5a holds for the line extensions with one inconsistent attribute;
2. H5a holds for the moderately distant extensions with one inconsistent attribute;

Hypothesis 5b: when similarities between the parent brand and extension are primed more incongruent extensions cause less strong brand knowledge changes than under the conditions when the differences between the brand and extension are primed:

1. H5b holds for the line extensions with two inconsistent attribute;
2. H5b holds for the moderately distant extensions with two inconsistent attribute;
3. H5b holds for the line extensions with a high degree of attribute inconsistency;
4. H5b holds for the moderately distant extension with high degree of attribute inconsistency.

Overall H5a and H5b were strongly supported for the associations' strength changes. MANOVA F statistics reached significance level for all different pairs of the extensions that were compared. Attitude changes were in the directions predicted by H5, but for most pairs of extensions compared did not reach the significance level.

The pattern of brand knowledge changes is illustrated by Figure 16, where the pattern for one of the associations (fortifying) is used to illustrate the pattern for all associations. Appendix 6 provides the means and changes in means for the strength of associations. The patterns of changes for these associations' strength and overall attitude are illustrated by Figure 16. Table 29 summarizes the tests for the hypotheses H5a and H5b.

Figure 16: Main Conditions Effect: Differences versus Similarities Primed Conditions - Associations and Overall Attitude Changes

Figure 16 1: Changes in Associations' Strength

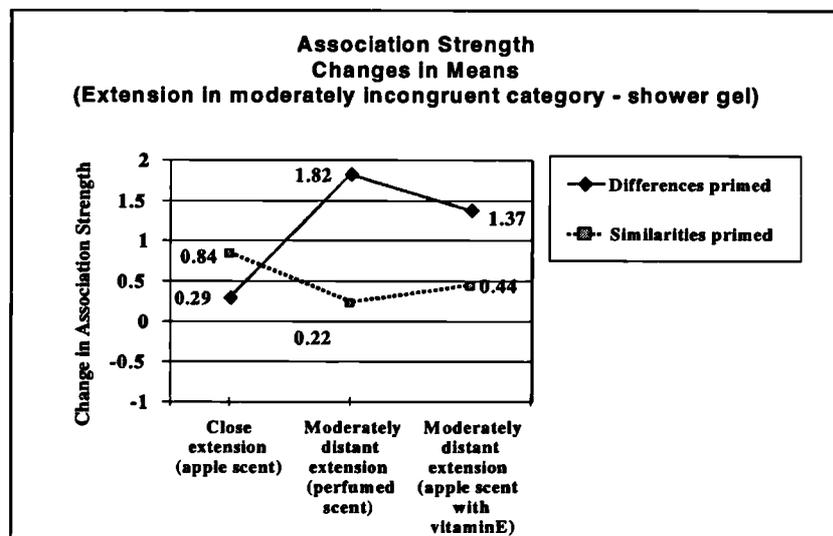
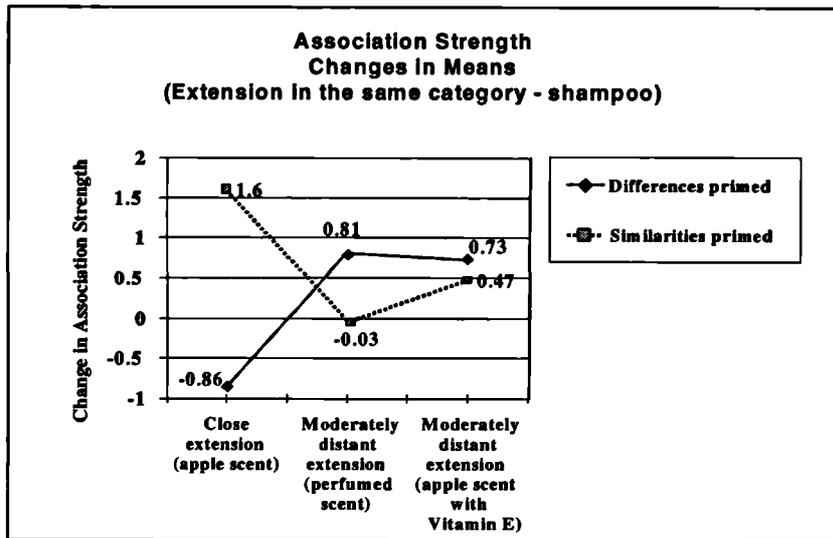


Figure 16.1 shows that when similarities between the brand and the extension were primed, the less incongruent extension caused stronger changes, whereas the more incongruent extension caused less strong changes in the brand associations' strength than they did under conditions when the differences between the brand and extension were primed.

Figure 16.2: Changes in the Overall Attitude

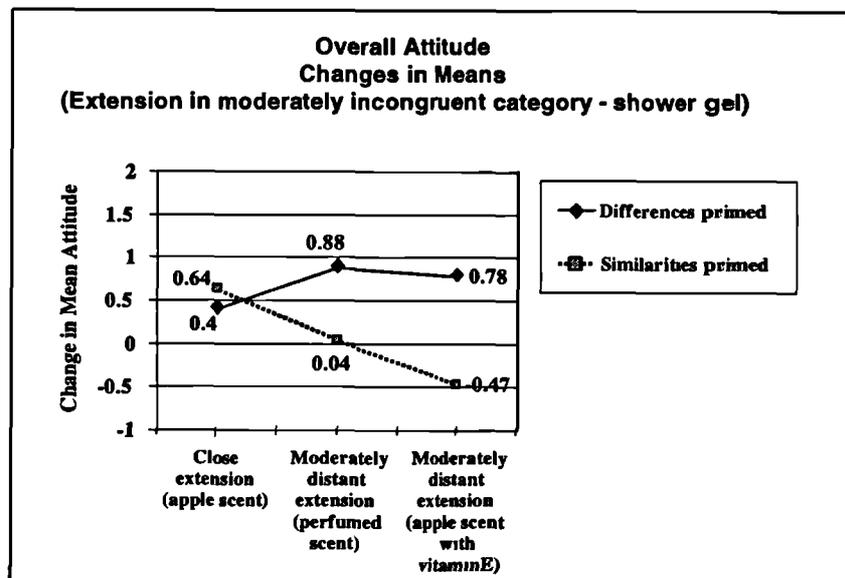
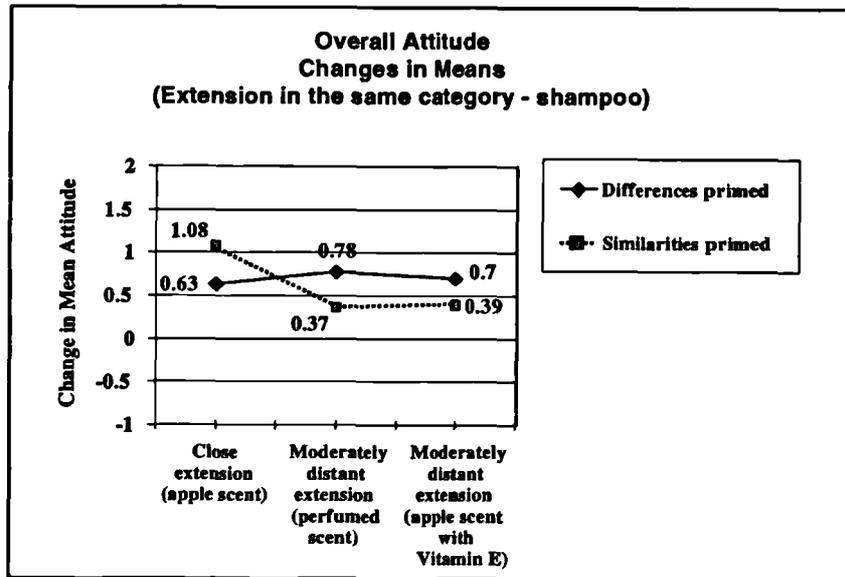


Figure 16.2 shows that when similarities between the brand and the extension were primed, the less incongruent extension caused stronger changes in the overall attitude, whereas the more incongruent extension caused less strong changes than they did under conditions when differences between the brand and extension were primed.

Additional analysis of changes by groups of associations (factors) showed that the conditions effect was in the predicted direction (Appendix 11) and significant for most factors (Appendix 12). The trustworthy factor demonstrated more resistance than other factors – for this factor the conditions effect did not reach the significance level for three out of six extensions: shampoo with apple scent and vitamin E, shampoo with perfumed scent, and shower gel with apple scent and vitamin E (only approached the significance level). The effects of some individual extension demonstrated more resistance to manipulation conditions than the effects of other extensions did. The effect of the shampoo extension with apple scent and vitamin E for science and technology factor did not demonstrate significant differences between the conditions which indicated that this extension was more resistant to conditions manipulations overall.

Summary of results

Table 29 summarizes the conditions effects.

Table 29: Main Conditions Effects

		<i>MANOVA</i>		<i>Overall attitude</i>	
		F values	P values	F values	P values
H5a-1	Apple scent shampoo	8.1	0.00	2.06	0.16
H5a-2	Apple scent shower gel	2.74	0.00	0.41	0.53
H5b-1	Apple scent with vitamin E shampoo	3.26	0.00	1.05	0.31
H5b-2	Apple scent with vitamin E shower gel	6.42	0.00	21.5	0.00
H5b-3	Perfumed scent shampoo	6.72	0.00	0.85	0.36
H5b-4	Perfumed scent shower gel	6.64	0.00	6.9	0.01

As predicted by hypothesis 5a, when similarities between the brand and the extension were primed, the less incongruent extension caused stronger brand

knowledge changes than it did under conditions when differences between the brand and extension were primed.

When brand knowledge changes were measured as changes in the associations' strength, this prediction was supported for both shampoo and shower gel categories. When brand knowledge changes were measured as changes in the overall attitude, the changes were in the right direction, but did not reach the significance level.

As predicted by hypothesis 5b, when similarities between the extension and parent brand were primed, the more incongruent extension caused less strong brand knowledge changes than it did under the conditions when the differences between the brand and extension were primed.

When brand knowledge changes were measured as changes in the associations' strength, this prediction was supported for four different operationalizations of incongruity tested. When brand knowledge changes were measured as changes in the overall attitude, the changes were in the right direction, but reached the significance level only for two out of four compared pairs (shower gel apple scent with vitamin E and perfumed scent shower gel).

Overall Summary of Results for Hypotheses Regarding Brand Knowledge Changes

Overall, hypotheses 3, 4, and 5 and the statement about interaction effects were supported for the brand knowledge changes measures as the changes in the overall

associations' strength, and demonstrated the predicted pattern of changes. However, they did not reach the significance level for brand knowledge changes measured as the changes in the overall attitude. Table 30 summarizes the results for hypotheses 3,4, and 5.

Table 30: Summary of the Results for the Hypotheses on the Brand Knowledge Changes

		<i>MANOVA Overall associations strength F values</i>	<i>Overall attitude F values</i>
H3-1	Shampoo apple scent versus apple scent with vitamin E	+	-
H3-2	Shower gel apple scent versus apple scent with vitamin E	+	-
H3-3	Shampoo apple scent versus perfumed scent	+	-
H3-4	Shower gel apple scent versus perfumed scent	+	-
H3-5	Shampoo versus shower gel apple scent	+	-
H3-6	Shampoo versus shower gel apple scent with vitamin E	+	-
H3-7	Shampoo versus shower gel apple scent versus perfumed scent	+	-
H4-1	Shampoo apple scent versus apple scent with vitamin E	+	+
H4-2	Shower gel apple scent versus apple scent with vitamin E	+	+
H4-3	Shampoo apple scent versus perfumed scent	+	-
H4-4	Shower gel apple scent versus perfumed scent	+	-
H4-5	Shampoo versus shower gel apple scent	+	-
H4-6	Shampoo versus shower gel apple scent with vitamin E	+	-
H4-7	Shampoo versus shower gel perfumed scent	+	-
H5a-1	apple scent shampoo	+	-
H5a-2	apple scent shower gel	+	-
H5b-1	apple scent with vitamin E	+	-
H5b-2	apple scent with vitamin E shower gel	+	+
H5b-3	Perfumed scent shampoo	+	-
H5b-4	Perfumed scent shower gel	+	+

Hypothesis is supported +

Hypothesis is not supported -

The overall findings are summarized and discussed in the next section.

6. DISCUSSION

This chapter summarizes the study's findings, states its implications for theory and practice, puts these claims in the context of the study's limitations, and identifies future research directions.

6.1 Summary of Findings

There are three main findings, which reflect three advanced propositions:

- As suggested by proposition 1, piecemeal processing underlies both typicality-based and bookkeeping-based patterns of brand knowledge changes:
 - algebraic piecemeal processing leads to bookkeeping-based pattern of changes;
 - thoughtful piecemeal processing leads to typicality-based pattern of changes;
 - more close extensions cause more changes under similarities primed conditions, whereas more distant extensions cause more changes under differences primed conditions.
- As suggested by proposition 2, under the same conditions alternative operationalizations of incongruity lead to the same patterns of brand knowledge changes.
- As suggested by proposition 3, different measures of brand knowledge changes showed similar patterns of changes under the same conditions. However, contrary to predictions, different measures of brand knowledge changes demonstrated different sensitivity capturing brand knowledge changes: changes in the associations' strength was a more sensitive measure of changes than changes in the overall attitude was.

The findings are discussed under two headings: the priming effect on extension information processing; and the priming effect on brand knowledge changes. The first section analyzes the types of information processing under two different priming conditions for three different operationalizations of incongruity. The second section covers the brand knowledge changes under three alternative types of incongruity operationalization, captured by two measures of changes: changes in the associations' strength and in the overall attitude towards the brand.

6.1.1 The Priming Effect on the Extension's Information Processing

The first two hypotheses are concerned with the priming effect on the processing of the extension's information. They were tested to support the claim that priming the extension's differences from the parent brand activates algebraic piecemeal processing, whereas priming extension's similarities with the parent brand activates thoughtful piecemeal processing. Proposition 1a and figure 6 summarized the predictions regarding the types of processing in response to different priming.

As predicted by hypothesis 1, shown by Figure 7, priming the extension's differences from its parent brand activates algebraic piecemeal processing: evaluation of the extension's information is based on the extension's characteristics rather than on the analysis of relationships between the extension and the parent brand. The results showed that more extension-based than parent brand-based thoughts were generated under this condition.

As predicted by hypothesis 2, shown by Figure 7, priming the extension's similarity with its parent brand activates thoughtful piecemeal processing: when the extension is evaluated, the relationships between the brand and extension are more carefully considered. Relative to the conditions when the extension's differences with the parent brand are primed, priming extension similarities with the parent brand results in:

- a) Generation of the same number of extension- based thoughts;
- b) Generation of more thoughts that consider the relationships between the extension's characteristics and the parent brand;

- c) Generation of the same number of simple evaluative thoughts;
- d) Generation of the same number of parent brand-based thoughts;
- e) Generation of a smaller number of simple evaluative and parent brand-based thoughts (aggregated together).

Hypotheses 2c and 2e were not supported. It was predicted that when the extension's similarities with its parent brand were primed (compared to when the extension's differences with the parent brand are primed), a smaller number of simple evaluative thoughts (H2c) and a smaller number of category induced thoughts (H2d) would be generated. The results showed that the difference in the number of simple evaluative thoughts and category-induced thoughts, although in the predicted direction, did not reach the significance level. However, the number of both types of thoughts aggregated together, as predicted, is significantly smaller under the conditions when similarities between the extension and the brand were primed. Thus, hypothesis H2e is supported.

The results supporting the first two hypotheses indicate that both types of priming lead to piecemeal processing as predicted by proposition 1a and summarized by figure 7. When the differences between the extension and the brand were primed, algebraic piecemeal processing was reinforced, more attention was given to the analysis of the extension's information on its own. Whereas, when differences between the extension and the brand were primed, thoughtful piecemeal processing was activated, more attention was given to the analysis of the relationships between the parent brand and extension, the extension's information was analyzed in detail, and fewer simple evaluative and category-

induced thoughts (characterizing lower level holistic category-based processing) were generated.

The findings supporting the first two hypotheses are consistent with those of Tverksy (1977) and Einstein and Hunt (1980) who showed that an orienting task affects the information processing. The item-specific task facilitates item-specific processing, whereas relational orienting task facilitates the relational type of processing.

The findings also provide insight regarding the two types of piecemeal processing, demonstrating that the main difference between two types of processing is in the number of thoughts that consider relationships between the brand and extension.

6.1.2 The Priming Effect on the Brand Knowledge Changes

6.1.2.1 Differences Primed Conditions: testing for bookkeeping pattern of brand knowledge changes

Hypotheses 3 and 4 related to the patterns of brand knowledge changes under different priming conditions. Proposition 1 and figure 8 summarize the predictions regarding the pattern of brand knowledge changes in response to alternative types of priming. They suggest that when the extension's differences with its parent brand are primed, a bookkeeping-based pattern of brand knowledge changes is expected. Alternatively, when the extension's similarities with its parent brand are primed, a typicality-based pattern of brand knowledge changes is expected.

Brand Associations' Strength Measures

As predicted by hypothesis 3, when the extension's differences with its parent brand were primed, brand knowledge changes occurred according to bookkeeping model: more discrepant extensions caused more changes in brand knowledge than less discrepant extensions did. This hypothesis was strongly supported for individual associations for both extensions (shampoo and shower gel) for two different operationalizations of incongruity:

- The number of incongruent attributes (apple scent versus apple scent with vitamin E);
- The degree of attribute incongruity (apple scent versus perfumed scent).

For these operationalizations of incongruity the hypotheses was supported by a MANOVA analysis and by the analysis of individual associations grouped in factors.

For the third operationalization of incongruity, category distance, the bookkeeping pattern of changes was supported by a MANOVA analysis and was partially supported for the individual factors. For the 'trustworthy' factor, results for the apple scent product demonstrated results that were opposite to the predicted pattern of changes, whereas shampoo caused more changes than shower gel. This effect might be explained by the Russian consumers' strong natural salience of trustworthiness.

Overall Attitude Measures.

As predicted by hypothesis 3, when the extension's differences from its parent brand were primed, the pattern of changes in the overall attitude to the brand was consistent with the bookkeeping theory predictions: the more incongruent extension caused stronger changes (except for shampoo versus shower gel apple scent), but did not reach the significance level.

However, the changes in the overall attitude did not show any significant difference in response to varying levels of the extension's incongruity. This result is consistent with the results of previous studies where the brand knowledge changes were measured as changes in the overall attitude, and no significant difference in the impact of more close and more distant extension on the brand knowledge changes were found (Keller, Aaker 1992; Romeo 1991). These results indicate that overall attitude is a less sensitive measure of brand knowledge changes than strength of individual associations, which might be explained by the aggregated nature of this measure.

6.1.2.2 Similarities Primed Conditions: testing for typicality-based pattern of brand knowledge changes

Changes in Associations' Strength

As predicted by hypothesis 4, when the extension's similarities with its parent brand were primed, brand knowledge changes occurred according to typicality-based model: the more discrepant extension caused less strong changes in the brand knowledge than the less discrepant extension did.

This pattern was strongly supported for both extensions (shampoo and shower gel) by MANOVA analysis and analysis of individual factors for two operationalizations of incongruity (number of incongruent attributes and degree of attribute incongruity). For the third operationalization of incongruity (across the categories) the typicality pattern of change was supported by a MANOVA analysis and was partially supported for some individual factors (the changes of trustworthy image factor, though in the predicted direction, have not reached the significance level).

Attitude measures changes

As predicted by hypothesis 4, overall attitude measures changes occurred according to typicality-based pattern of brand knowledge changes. They reached the significance level only for two out of seven tested operationalizations and levels of incongruity (shower gel apple versus apple scent with vitamin E, and shampoo versus shower gel apple scent with vitamin E). For other operationalizations and levels of incongruity tested the patterns of changes were in the predicted direction, but not significant.

6.1.2.3 Similarities and Differences Priming Conditions: interactions with extension's incongruity and main effects

Interaction Effects

The analysis of interaction effects found significant interactions for the changes of individual associations. Analysis of associations grouped in factors demonstrated the same patterns (Appendix 10.1 –10.3). The single exception is the trustworthy image factor for shampoo versus shower gel apple scent with vitamin E that did not show the interaction effect for trustworthy factor. This is due to the fact that there was no difference in the extension's impact on the parent brand trustworthy between the similarities versus differences primed conditions (no conditions effect) for both shampoo and shower gel extensions.

Some significant interactions were found for the overall attitude changes measures (shower gel apple scent versus apple scent with vitamin E, and shampoo versus shower gel for apple scent with vitamin E). This is due to the fact that there was a strong significant main conditions' effect for the shower gel apple scent with vitamin E extension. Other overall attitude changes were in the predicted direction, but did not reach the significance level, which again confirms their lower sensitivity (relative to the measures of associations strength) reflecting the brand knowledge changes.

Condition Main Effects

The main effects for the conditions were significant for associations. As predicted by proposition 1b, specified by hypothesis 5a, and illustrated by figure 10, when similarities between the brand and extension were primed, the less incongruent extension caused

stronger brand knowledge changes than it did under conditions when differences between the brand and extension were primed. Whereas, as predicted by hypothesis 5b, and illustrated by figure 10, the more incongruent extension caused less strong brand knowledge changes than it did under the conditions when the differences between the brand and extension were primed.

For the attitude changes conditions main effects are in the predicted direction, but did not reach the significance level (except for shower gel apple scent with vitamin E and perfumed scent). This operationalization demonstrated the significant interaction due to the strong main extensions' incongruity effect under the similarity primed conditions. Overall, consistent with the results of hypotheses 3 and 4, the measures of overall attitude appeared to be more resistant to changes and less affected by the manipulation conditions.

In sum, strong support was found for the bookkeeping pattern of brand knowledge changes under conditions when incongruity is primed, and for the typicality-based pattern of brand knowledge changes under conditions when typicality is primed. Less incongruent extensions caused more changes under similarities-primed conditions, whereas more incongruent extensions caused more changes under differences primed conditions. The results were highly significant for two operationalizations of incongruity:

- The number of incongruent attributes, and
- The degree of attribute incongruity.

The results were in the predicted direction, though less conclusive at the category distance operationalization of incongruity.

As far as alternative measures of brand knowledge changes are concerned, overall attitude changes appeared to be less sensitive measures than associations' strength changes. This finding might explain previous results when the changes in the brand knowledge structure were measured as the overall attitude towards the brand and the effect of the extension's incongruity was not found (Romeo 1991; Keller, Aaker 1992; Gurhan-Canli, Maheswaran 1998).

Some additional findings indicate that, the effect of some extensions appeared to be more resistant to the conditions' manipulations than effects of other extensions. The effect of shampoo with apple scent and vitamin E extension on the pattern of brand knowledge changes was not significantly affected by the conditions for two factors out of three – trustworthiness and science and technology.

Lastly, the effect of some factors appeared to be more resistant to the conditions' manipulations than were the effects of other factors. The trustworthy factor was less affected by the manipulations for three out of six extensions used in the study (shampoo apple scent with vitamin E, shampoo with perfumed scent, shower gel apple scent with vitamin E). Regardless of the manipulated conditions, consumers tended to have more trust in the close extension (shampoo apple scent) than in more distant extensions, and this might be attributed to the conditions of the developing Russian market, where consumers are very sensitive to the counterfeit products.

6.2 Implications of Findings

Theoretical Implications

The effect of brand extensions' on the parent brand knowledge has differed between studies (Loken and Roedder John 1993, Gurhan–Canli and Maheswaran 1998). The findings of this research further advance our theoretical understanding of the extensions' evaluation processing when the information about the extension is incorporated into the brand knowledge structure. Particularly, it identifies the moderating factors (the two types of piecemeal processing - algebraic and thoughtful) that account for the mixed findings and provide insight on the processing mechanism underlying brand knowledge changes.

Previous research advanced alternative propositions regarding the type of processing that facilitates opposite patterns of brand knowledge changes (see figure 5). Loken and Roedder John (1993) suggested that piecemeal processing might be responsible for the typicality-based pattern of brand knowledge changes, while category-based processing might be responsible for the bookkeeping pattern of brand knowledge changes. In contrast, Gurhan-Canli and Maheswaran (1998) reported a bookkeeping pattern of brand knowledge changes under high motivation (high elaboration) condition, and a typicality-based pattern of brand knowledge changes under low motivation condition (low elaboration).

My findings allow reconciliation of these different findings. There is evidence that both the bookkeeping and typicality-based pattern of brand knowledge changes occurred under the piecemeal type of processing, as illustrated by figure 6. The bookkeeping

pattern occurred under the “lower level processing” - algebraic piecemeal processing, while typicality-based pattern occurred under the “higher level processing” – thoughtful piecemeal processing, as illustrated by figure 7.

In addition, this study considered three alternative operationalizations of incongruity, demonstrating the same patterns of brand knowledge changes under the same conditions of the extension’s information representation. These findings allow consolidation of the results of the previous studies. They demonstrate that the difference in the results of the previous studies have happened because of differences in the way incongruity between the stimuli and extension had been operationalized.

Lastly, the findings of this study suggest that cognitive measures of brand knowledge structure are more sensitive to changes than the measures of the overall attitude. This might be the reason why previous studies that used the attitudinal measures of changes did not demonstrate a significant effect of extension’s incongruity on the brand knowledge changes.

Managerial Implications

Brand extensions have become an increasingly popular option for firms launching new products in the marketplace. This research was developed to test the potential effects of extensions on the parent brand. The realistic extensions were selected with a support of Fructis brand manager, Celine Gilg. Celine expressed interest in potential effects of extensions on the parent brand. She stated that it is important to understand the effect of

extensions on the brand, because Fructis was planning to launch new extensions in order to appeal to a broader audience. Celine was interested in understanding the mechanism of extension's effect on the parent brand and the methods of potential control over these effects through targeted brand extension positioning.

The goal of this research was to help brand managers better understand the psychological processes underlying the formation and modification of family brand perceptions, which leads to a more informed approach to building brand equity.

The findings show that if the managers want to change the perception of their brand by introducing the new extension, different strategies to facilitate changes in the perception of the brand might be more efficient, depending on the perceived incongruity of the new extension with the parent brand. If the considered extension is perceived as being similar to the existing brand products, it is desirable to emphasize the extension's similarity with the parent brand. If the extension is perceived as being different from the existing brand products, it might be more useful to employ a "subbranding" strategy, putting more emphasis on the extension's information itself rather than on the relationships between the brand and extension. For example, if Fructis launches shampoo with an apple scent, which is perceived as being a similar extension to the parent brand, the extension's effect on the parent brand will be facilitated if the relationships between the extension and the brand are emphasized in the communication campaign ("Another fruit scent from Fructis"). Alternatively, if the more distant extension is launched, for example shampoo with apple scent and vitamin E, it might be more desirable to focus on the extension's characteristics

to facilitate the desirable brand knowledge changes (“Shampoo with vitamins is good for your hair health”).

In addition, this research emphasizes the importance of monitoring multiple measures of brand knowledge changes in response to new extensions. It suggests that changes in the specific attributes might be a more sensitive measure of brand knowledge changes than the overall changes in the attitude towards the brand.

Lastly, the findings suggest that some dimensions of the brand associations are more resistant to the priming conditions, which means it might be difficult to manipulate the perception of these dimensions. It is more difficult to change consumers’ trust to certain products than to change their attitude to the cognitive associations related to this product. This factor needs to be taken into account when brand/extension positioning strategy is designed and implemented.

6.3 Limitations and Future Research Directions

It is important to recognize the limitations of this study and consider the directions for future research. Four main limitations are related to the type of extension's information processing and stimuli used in this study:

- The type of an extension's information processing;
- The degree of an extension's incongruity;
- The operationalizations of an extension's incongruity;
- the structure of the parent brand category.

This study considered only two types of extensions' information processing: algebraic piecemeal and thoughtful piecemeal processing. It used the extensions moderately incongruent to the brand to facilitate these two types of processing. To develop the idea of moderating factor of information processing on the pattern of brand knowledge changes, it is important to consider the typicality-based processing and the pattern of changes under this processing. Further research is required to investigate the conditions facilitating typicality-based processing and the effect of this processing on the pattern of brand knowledge changes.

To extend the generalizability of the findings, it is also important to consider close and very incongruent extensions information processing and the effects of this processing on the parent brand. It is not quite clear what kind of information processing is used for very incongruent extensions evaluation (category-based or piecemeal). It is also not clear how the very incongruent stimuli are evaluated: whether they are subtyped and do not cause any

changes in the parent structure, or whether they are subtyped, but change the structure of the parent brand. Previous studies reported mixed findings in regards of brand knowledge changes in response to very incongruent extensions. Romeo (1991) found the positive enhancement effect in response to a very incongruent extension's negative information, while Gurhan-Canli and Maheswaran (1998) found that the information about a very incongruent extension was subtyped and did not cause any changes in the overall attitude towards the brand. The very incongruent extension's information processing and effect on the parent brand is an under investigated area that requires further research.

This study investigates three alternative evaluations of incongruity and compares the results across different operationalizations. It would be useful to compare other operationalizations (such as condensed/versus dispersed information presentation) with the ones investigated in this study to test whether the results are generalizable across all the operationalizations.

In addition other factors that might affect the pattern of brand knowledge changes in response to incongruent information, such as the structure of the parent category, need to be investigated.

Different structures might be more or less sensitive to incongruent information and affect the pattern of brand knowledge changes. It might be more difficult to change the perceptions of the focused brand, than the perceptions of the diversified brand, because the associations describing the focused brand might be stronger and more crystallized. The

type of brand positioning (for example, symbolic versus functional) might also affect the brand knowledge resistance to changes.

In summary, this dissertation analyzes the changes in the single brand strongly with a small portfolio of products (two products only) in response to three different types of extension's incongruity. Other factors that might affect the pattern of brand knowledge changes need to be researched.

6.4 Conclusion

This dissertation addressed the issue of brand knowledge development in response to incongruent information presented by a brand extension. The understanding of brand knowledge development has important implications for brand management, because it is essential to know how to improve or at least not to damage, the brand when a new extension is launched.

This dissertation provided an overview of relevant theoretical and empirical studies. The suggested synthesis of theoretical studies enabled identification of various dimensions of the cognitive structure. When the information about a new extension is incorporated, the cognitive structure of the brand might change along these dimensions. Alternative dimensions of incongruity between the brand and its extensions were considered. Theoretical principles and models of brand knowledge changes leading to the opposite predictions regarding the relationships between the increasing extension's incongruity and the pattern of brand knowledge changes were discussed. Two different types of extension's information processing, - piecemeal algebraic and piecemeal thoughtful, were explored. The role of the type of the extensions' information processing as a factor that could lead to different patterns of brand knowledge changes was investigated.

The findings suggested that algebraic piecemeal processing (which focuses on the extension's information on its own) leads to a bookkeeping-based pattern of brand knowledge changes. In contrast, thoughtful piecemeal processing, (which focuses on the extension in its relation to the parent brand) leads to a typicality-based pattern of brand

knowledge changes. This pattern was shown to be true regardless of the operationalization of incongruity. Furthermore, the different measures were found to be differentially sensitive to certain brand knowledge changes. Therefore, the previously conflicting results can indeed be accounted for by different types of processing, as well as different measures of brand knowledge changes.

Overall, this dissertation intended to promote further theoretical understanding of the ways in which incongruent information is incorporated, of the structural aspects of brands, and of alternative operationalizations of incongruity between an extension and its brand. As a result, it aimed to help brand managers to gain control over the extension's effect on the parent brand.

REFERENCES

- Aaker, David A. (1996), *Building Strong Brands*, Free Press N.Y.
- and Kevin Lane Keller (1990), "Consumer Evaluations of Brand Extensions," *Journal of Marketing*, 54 (January), 27-41.
- (1990), "Brand Extensions: The Good, the Bad, and the Ugly," *Sloan Management Review*, (summer), 47-56.
- Ashmore, Richard D. (1981), "Sex Stereotypes and Implicit Personality Theory," in *Cognitive Processes in Stereotyping and intergroup behavior* ed. David L. Hamilton, Lawrence Erlbaum Associates, Hillsdale, New Jersey, 37-81.
- Ahluwalia, Rohini and Gurhan-Canli, Zeynep (2000), "The Effects of Extensions on the Family Brand Name: An Accessibility-Diagnosticity Perspective," *Journal of Consumer Research*, 27 (December), 371-381.
- Ajzen, Icek and Martin Fishbein (1980), *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice - Hall, Inc.
- Anderson, John R. and Gordon H. Bower (1980), *Human Associative Memory: A Brief Edition*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- (1983), *The Architecture of Cognition*. Cambridge, MA: Harvard University Press.
- Bagozzi, Richard P. (1994), *Principles of Marketing Research*. Blackwell Publishers, Cambridge, Massachusetts.
- Barsalou, Lawrence (1983), "Ad Hoc Categories," *Memory and Cognition*, 11 (March), 211-227.
- (1985), "Ideals, Central Tendency, and Frequency of Instantiation as Determinants of Graded Structure in Categories," *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 11(April), 629-654.
- Boush, David M. and Barbara Loken (1991), "A Process-Tracing Study of Brand Extension Evaluation," *Journal of Marketing Research*, 28 (February), 16-28.
- Broniarczyk, Susan M. and Joseph W. Alba (1994), "The Importance of the Brand in Brand Extension," *Journal of Marketing Research*, 31 (May), 214-28.
- Chakaravarti, D., MacInnis, D.J., and Nakamoto, K. (1989), "Product Category Perceptions, Elaborative Processing, and Brand Name Extension Strategies," in *Advances in Consumer Research*, Vol.17, 910-916, eds. Goldberg, M.E., G. Gorn, and R.W. Pollay. Provo, UT: Association for Consumer Research.

Cohen, Joel and Kunal Basu (1987), "Alternative Models of Categorization: Toward a Contingent Processing Framework," *Journal of Consumer Research*, 13 (March), 455-472.

Collins, Allan M. and M. Ross Quillian (1969), "Retrieval Time From Semantic Memory," *Journal of Verbal Learning and Verbal Behavior*, 8 (April), 240-247.

-----, and Elizabeth F. Loftus (1975), "A Spreading Activation Theory of Semantic Processing," *Psychological Review*, 87(June), 407-428.

Crocker, Jennifer (1984), "A Schematic Approach to Changing Consumers' Beliefs," *Advances in Consumer Research*, 472-477.

-----, Susan T. Fiske, and Shelly E. Taylor (1984), "Schematic Bases of Belief Change," in *Attitudinal Judgment*, J. Richard Eiser, ed. New York Springer-Verlag, 197-226.

----- (1981), "Judgment of Covariation by Social Perceivers," *Psychological Bulletin*, 90 (September), 272-292.

Dacin, Peter A. and Daniel C. Smith (1994), "The Effect of Brand Portfolio Characteristics on Consumer Evaluations of Brand Extensions," *Journal of Marketing Research*, 31 (May), 229-42.

Einstein, Gilles O. and R. Reed Hunt (1980), "Levels of Processing and Organization: Additive Effects of Individual-Item and Relational Processing," *Journal of Experimental Psychology: Human Learning and Memory*, 6 (September), 588-598.

Eysenck, Michael W. and Mark T. Keane (1990), *Cognitive Psychology*. London: Lawrence Erlbaum Associates.

Farquhar, Peter H, Paul M. Herr, and Russel H. Fazio, (1996) "Impact of Dominance and Relatedness on Brand Extensions," *Journal of Consumer Psychology*, 5 (February), 135-159.

----- and Herr, P.M. (1993), "The Dual Structure of Brand Associations," in *Brand Equity and Advertising: Advertising's role in Building Strong Brands*, 263-277, eds. D.A. Aaker and A.L. Biel, Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

-----, Han, J.Y., Herr, P.M., & Ijiri, Y. (1992), "Strategies for Leveraging Master Brands," *Marketing Research*, 4, 32-43.

----- (1989), "Managing Brand Equity," *Marketing Research*, 1(1), 24-33.

Fishbein, Martin and Icek Ajzen (1975), *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.

Fiske, Susan T. and Steven L. Neuberg (1990), A Continuum of Impression Formation, from Category-Based to Individuating Processes: Influences of Information and Motivation on Attention and Interpretation, *Advances in Experimental Social Psychology*, Vol.23, 1-74

----- and Mark A. Pavelchak (1986), Category-Based versus Piecemeal-Based Affective Responses: Developments in Schema-Triggered Affect," *The Handbook of Motivation and Cognition: Foundations of Social Behavior*, eds. Richard M. Sorrentino and E. Tory Higgins, New York: Guilford, 167 -203

----- and Taylor (1984), *Social Cognition*. McGraw-Hill, Inc.

-----, Kindler, D.R., & Larter, M., (1983) "The Novice and the Expert: Knowledge-Based Strategies in Political Cognition," *Journal of Experimental and Social Psychology*, 19, 381-400.

----- (1982), Schema-Triggered Affect: Applications to Social Perception, in M.S. Clark and S.T. Fiske (Eds.), *Affect and Cognition: the 17th Annual Carnegie Symposium on Cognition*, Hillsdale, NJ: Erlbaum.

Graesser, Arthur C, Sallie E. Gordon, and John D. Sawyer (1979), "Recognition Memory for Typical and Atypical Actions in Scripted Activities: Tests of a Script Pointer +Tag Hypothesis," *Journal of Verbal Behavior*, Vol. 18, 319-332.

Gurwitz, S.B., and Dodge K.A. (1977), "Effects of Confirmations and Disconfirmations on Stereotype-Based Attributions," *Journal of Personality and Social Psychology*, 35, 495-500.

Gurhan-Canli, Zeynep, and Durairaj Maheswaran (1998), "The Effects of Extension on Brand Name Dilution and Enhancement," *Journal of Marketing Research*, 35 (November), 464-473.

Herr, Paul M., Peter H. Farquhar, and Russel H. Fazio (1996), "Impact on Dominance and Relatedness on Brand Extensions," *Journal of Consumer Psychology*, 5(2), 135-59.

----- (1989), "Priming Price: Prior Knowledge and Context Effects," *Journal of Consumer Research*, 16 (June), 67-75.

-----, Steven J. Sherman, and Russel H. Fazio (1983), "On the Consequences of Priming: Assimilation and Contrast Effects," *Journal of Experimental Psychology*, 19 (July), 323-40.

Hunt, R. Reed, Jayne Ann Ausley, and E. Eugene Schultz, Jr. (1986), "Shared and Item-specific Information in Memory for Event Descriptions," *Memory and Cognition*, 14 (January), 49-54.

- and Gilles O. Einstein (1981), "Relational and Item-Specific Information in Memory," *Journal of Verbal Learning and Verbal Behavior*, 20 (October), 497-514.
- and Catherine E. Seta (1984), "Category Size Effects in Recall: The Roles of Relational and Individual Item Information," *Journal of Experimental Psychology: Learning Memory and Cognition*, 10 (July), 454-464.
- Iacobucci, Dawn (1994), Analysis of Experimental Data, in Richard Bagozzi, *Principles of Marketing Research*, Blackwell Publishers, Cambridge, Massachusetts, 224 – 278.
- Interbrand (1990), *Brands*. Mercury books, Gold Arrow Publications Ltd., London, 1990.
- Kapferer, Jean-Noel (1992), *Strategic Brand Management*. Kogan Page US.
- Keller, Kevin Lane (1993), "Conceptualizing, Measuring, and Managing Customer-Based Brand Equity," *Journal of Marketing*, 57 (January), 1-22.
- and David A. Aaker (1992), "The Effects of Sequential Introduction of Brand Extensions," *Journal of Marketing Research*, 29 (February), 35-50.
- Keppel, Geoffrey (1973), *Design and Analysis*. Prentice – Hall, A Simon & Schuster Company, Upper Saddle River, New Jersey.
- Krippendorff, Klaus (1980), *Content Analysis: An Introduction to its Methodology*, Newbury Park, CA: Szye.
- Lomax, Wendy and Gil McWilliam (1998), " Does a Line Extension Strategy Encourage Trial? Evidence from the Cross-Purchasing Patterns Between Parent and New Line," *Centre for Marketing Working Paper*, No. 98-201, July 1998.
- Loken, Barbara and Deborah Roedder John (1993), "Diluting Brand Beliefs: When Do Brand Extensions Have a Negative Impact?," *Journal of Marketing*, 57 (July), 71-84.
- and James Ward (1990), "Alternative Approaches to Understanding the Determinants of Typicality," *Journal of Consumer Research*, 17 (September), 111-126.
- Malaviya, Prashant, Jolita Kiselius, and Brian Sternthal (1996), "The Effect of Type of Elaboration on Advertising Processing and Judgment," *Journal of Marketing Research*, 33, 410-421
- Mandler, George (1982), "The Structure of Value: Accounting for Taste," in *Affect and Cognition: The 17th Annual Carnegie Symposium*, eds. Margaret S. Clark and Susan T. Fiske, Hillsdale, NJ: Lawrence Erlbaum Associates, 3-36.
- Markus, H. (1977), "Self Schemata and Processing Information about the Self," *Journal of Personality and Social Psychology*, 35, 63-78.

Martin, Leonard (1986), "Set/Reset: Use and Disuse of Conception Impression Formation," *Journal of Personality and Social Psychology*, 51 (September), 493-504.

-----, John J. Seta, and Rick A. Crelia (1990), "Assimilation and Contrast as a Function of People's Willingness and Ability to Expend Effort in Forming an Impression," *Journal of Personality and Social Psychology*, 59 (July), 27-37.

Mervis, Carolyn B., J. Catlin, and Eleanor Rosch (1981), "Categorization of Natural Objects," *Annual Review of Psychology*, 32, 89-115.

Meyers-Levy, Joan (1991), "Elaborating on Elaboration: The Distinction Between Relational and Item-Specific Elaboration," *Journal of Consumer Research*, 18 (December), 358-67.

----- and Alice M. Tybout (1989), "Schema Congruity as a Basis for Product Evaluation," *Journal of Consumer Research*, 16 (June), 39-54.

----- and Brian Sternthal (1993), "A Two-Factor Explanation of Assimilation and Contrast Effects," *Journal of Marketing Research*, 30 (August), 359-368.

Milberg, Sandra J., C. Whan Park, and Michael S. McCarthy (1997), "Managing Negative Feedback Effects Associated with Brand Extensions: the Impact of Alternative Branding Strategies," *Journal of Consumer Psychology*, 6 (February), 119-40.

Nelson, P., 1974, "Advertising as Information," *Journal of Political Economy*, 4 (July/August), 729-754.

----- (1970), "Information and Consumer Behaviour," *Journal of Political Economy*, 78 (March/April), 311-329.

Nunally, J.C. 1961, *Popular Concepts of Mental Health*. New York: Hol, Rinehart & Wilston.

Osgood, Charles E., Percy H. Tannenbaum (1955), "The Principle of Congruity in the Prediction of Attitude Change," *Psychological Review*, 62 (January), 42-55.

O'Sullivan, Chris S. and Francis T. Durso (1984), "Effect of Schema-Incongruent Information on Memory for Stereotypical Attributes," *Journal of Personality and Social Psychology*, 47 (January), 55-70.

Park, Bernadette, Reid Hastie (1987), "Perception of Variability in Category Development: Instance- Versus Abstraction-Based Stereotypes," *Journal of Personality and Social Psychology*, 53, No.4, 621-635.

Park, C. Whan, Bernard J. Jaworski, and Deborah J. MacInnis (1986), "Strategic Brand Concept-Image Management," *Journal of Marketing*, 50 (October), 135-45.

-----, Michael S. McCarthy, and Sandra J. Milberg (1993), "The Effects of Direct and Associative Brand Extension Strategies on Consumer Response to Brand Extensions," in *Advances in Consumer Research*, 20, Leigh McAlister and Michael L. Rothschild, eds. Provo, UT: Association for Consumer Research, 28-33.

-----, Sandra Milberg, and Robert Lawson (1991), "Evaluation of Brand Extensions: The Role of Product Feature Similarity and Brand Concept Consistency," *Journal of Consumer Research*, 18 (September), 185-93.

-----, Sung Youl Jun, and Allan D. Shocker (1996), "Composite Branding Alliances: An Investigation of Extension and Feedback Effects," *Journal of Marketing Research*, vol. 33 (November), 453-466.

-----, Robert Lawson, and Sandra Milberg (1989), "Memory Structure of Brand Names," *Advances in Consumer Research*, 16, 726-731.

Piaget, Jean (1929), *The Origin of Intelligence in the Child*. London, Routledge (1997).

----- (1929), *Selected works: The Child's Conception of the World*. v.1, London, Routledge (1997).

Randall, Taylor, Karl Ulrich and David Reibstein (1998), "Brand Equity and Vertical Product Line Extent," *Marketing Science*, 17, No. 4,

Reddy, Srinivas K., Susan L. Holak, and Subodh Bhat (1984), "To Extend or Not to Extend: Success Determinants of Line Extensions," *Journal of Marketing Research*, 31 (May), 243-262.

Reeder, C.D. & Brewer, M.B. (1979), "A schematic model of dispositional attribution in interpersonal perception," *Psychological Review*, 86, 61-79.

A. Ries and J. Trout (1985), *Positioning: The Battle for Your Mind*. New York: McGraw-Hill.

Roedder John, Deborah, Barbara Loken, and Christopher Joiner (1998), "The Negative Impact of Extensions: Can Flagship Products Be Diluted?," *Journal of Marketing*, 62 (January), 19-32.

Romeo, Jean B. (1991), "The Effect of Negative Information on the Evaluation of Brand Extensions and the Family Brand", in *Advances in Consumer Research*, Vol.18, Rebecca H. Holman and Michael R. Solomon, eds. Provo, UT: Association for Consumer Research, 399-406.

- Rosch, Eleanor (1978), "Principles of Categorization," in *Cognition and Categorization*, eds. Eleanor Rosch and Barbara B. Lloyd, Hillsdale, NJ: Lawrence Erlbaum Associates, 27-48.
- , Carolyn Mervis, Wayne Gray, David Johnson, and Penny Boyes-Braem (1976), "Basic Objects in Natural Categories," *Cognitive Psychology*, 7 (October), 573-605.
- and Carolyn Mervis (1975), "Family Resemblance: Studies in the Internal Structure of Categories," *Cognitive Psychology*, 7 (October), 573-605.
- Rothbart, Myron (1981), "Memory Processes and Social Beliefs," in *Cognitive Processes in Stereotyping and intergroup behavior* ed. David L. Hamilton, Lawrence Erlbaum Associates, Hillsdale, New Jersey, 145-181.
- and Park, B.M. (1982), "On the Confirmability and Disconfirmability of Trait Concepts," *Journal of Personality and Social Psychology*, 1986, 50, No.1, 131-142.
- Rumelhart, David and Donald Norman (1978), "Accretion, Tuning, and Restructuring: Three Modes of Learning," in *Semantic Factors in Cognition*, ed. John W. Cotton and Roberta L. Klatzky, Lawrence, Erlbaum Associates, Hillsdale, New Jersey, 37-53.
- and Donald A. Norman (1972), "Accretion, Tuning and Restructuring: Three Models of Learning," *Organization of Memory*, E. Tulving and W. Donaldson, eds. New York: Academic Press, Inc., 197-246.
- Solomon, M. (1983), "The Role of Products as Social Stimuli: A Symbolic Interactionism Perspective," *Journal of Consumer Research*, 10 (December), 319 – 329.
- Srull, T.K., & Wyer, R.S., Jr. (1980), "Category accessibility and social perception: some implications for the study of person memory and interpersonal judgements," *Journal of Personality and Social Psychology*, 38, 841-856.
- Sternthal, Brian, Alice M. Tybout, and Bobby J. Calder (1994), "Experimental Design; Generalization and Theoretical Explanation," in Richard Bagozzi *Principles of Marketing Research*, Blackwell Publishers, Cambridge, Massachusetts, 195 – 223.
- Sujan, Mita and James R. Bettman (1989), "The Effects of Brand Positioning Strategies on Consumers' Brand and Category Perceptions: Some Insights From Schema Research," *Journal of Marketing Research*, 26, 454-67.
- and Christine Dekleva (1987), "Product Categorization and Inference Making: Some Implications for Comparative Advertising," *Journal of Consumer Research*, 14 (December), 372-378.

----- and Alice M. Tybout (1988), "Applications and Extensions of Categorization Research in Consumer Behavior," in *Advances in Consumer Research*, vol. 15, ed. Michael J. Houston, Provo, UT: Association for Consumer Research, 50-54.

Sullivan M. (1990), "Measuring Image Spillovers in Umbrella-branded Products," *Journal of Business*, 63, no.3, 309-329.

Taylor, Shelly E. (1981), "A Categorization Approach to Stereotyping," in *Cognitive Processes in Stereotyping and Intergroup Behavior*, ed. David L. Hamilton, Lawrence Erlbaum Associates, Hillsdale, New Jersey, 83-113.

Tauber, Edward M. (1988), "Brand Leverage: Strategy for Growth in a Cost-Control World," *Journal of Advertising Research*, 28 (August), 26-30.

Tversky, Amos (1977), "Features of Similarity," *Psychological Review*, 84 (July), 327-352.

University of Minnesota Consumer Behavior Seminar (1987), "Affect Generalization to Similar and Dissimilar Brand Extension," *Psychology and Marketing*, 4 (Fall), 225-237.

Vygotsky, Lev (1934), *Thought and Language*. The MIT Press, Cambridge, Massachusetts, London, England, 1997.

Wansink, Brian and Michael L. Ray (1996), "Advertising Strategies to Increase Usage Frequency," *Journal of Marketing*, 60, 31-46.

Weber, Renee and Jennifer Crocker (1983), "Cognitive Processes in the Revision of Stereotypic Beliefs," *Journal of Personality and Social Psychology*, 45, 961-977.

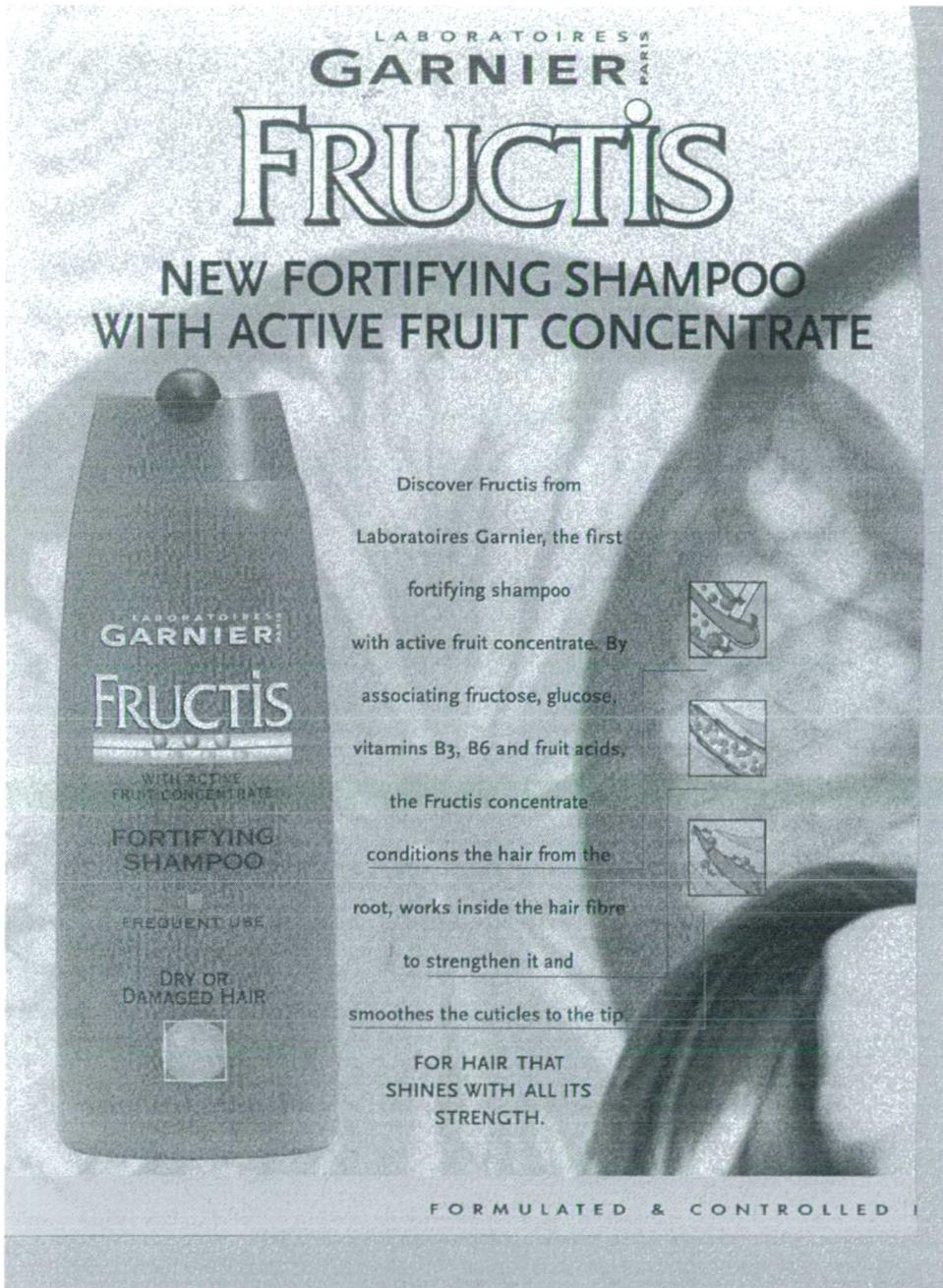
Wyer, Robert. S. and Srull, T.K. (1981), "Category Accessibility: Some Theoretical and Empirical Issues Concerning the Processing of Social Information," in E. T. Higgins, C.P. Herma & M.P. Zanna (Eds) *Social Cognition: The Ontario Symposium* (Vol. 1), Hillsdale, NJ, Lawrence Erlbaum.

----- (1970), "Information Redundancy, Incongruity, and Novelty and Their Role in Impression Formation," *Journal of Experimental Social Psychology*, 6, 111-127.

APPENDIX 1: Fructis Advertisement

Hair care FRUCTIS

The first line of haircare made with fruit concentrates, created to give hair strength and shine .



LABORATOIRES
GARNIER PARIS

FRUCTIS

NEW FORTIFYING SHAMPOO WITH ACTIVE FRUIT CONCENTRATE

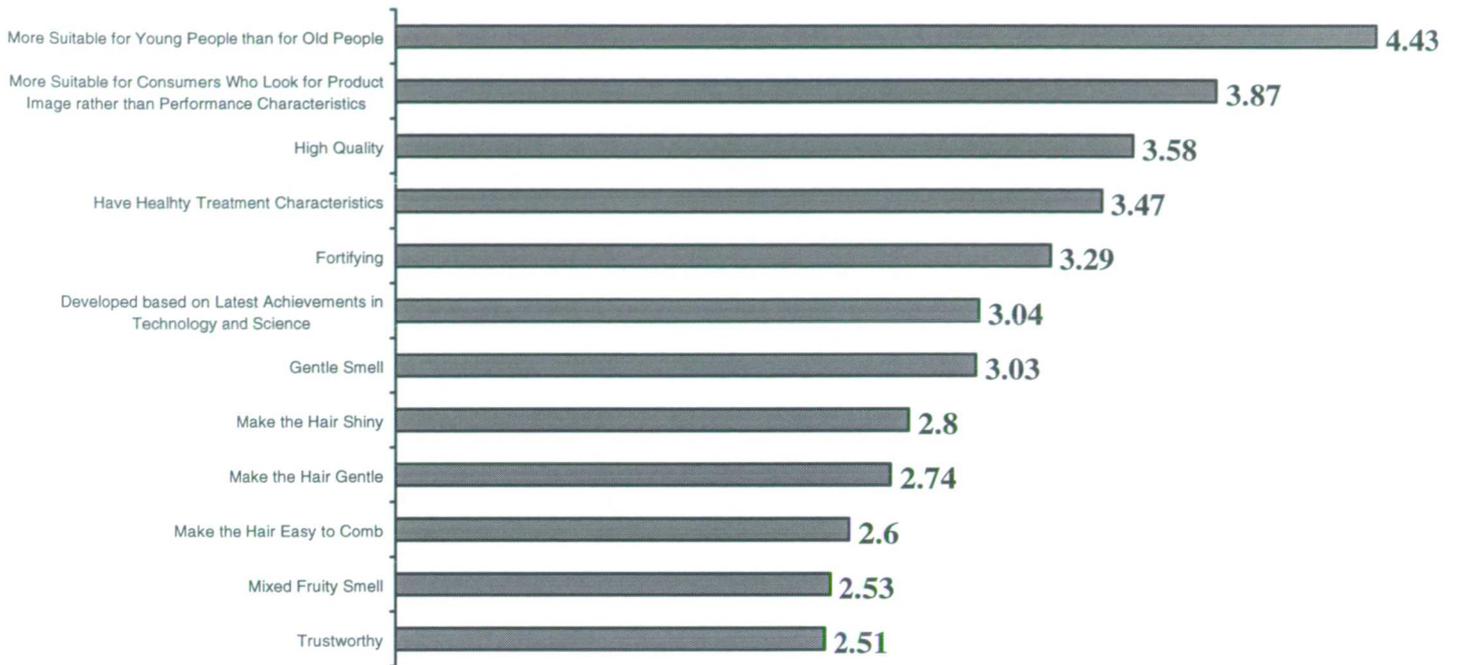
Discover Fructis from
Laboratoires Garnier, the first
fortifying shampoo
with active fruit concentrate. By
associating fructose, glucose,
vitamins B3, B6 and fruit acids,
the Fructis concentrate
conditions the hair from the
root, works inside the hair fibre
to strengthen it and
smoothes the cuticles to the tip.

FOR HAIR THAT
SHINES WITH ALL ITS
STRENGTH.

LABORATOIRES
GARNIER
FRUCTIS
WITH ACTIVE
FRUIT CONCENTRATE
**FORTIFYING
SHAMPOO**
FREQUENT USE
DRY OR
DAMAGED HAIR

FORMULATED & CONTROLLED

APPENDIX 2: Pretest 2 – Fructis Associations Measures – Control Group



1

■ 1-very characteristic, 7-not characteristic at all

APPENDIX 3.1: Questionnaire: Similarities Primed Conditions

selection block

1. Have you ever used Fructis products?

a) Yes

b) No --- (if the respondent answers no, complete the interview).

1. How familiar are you with Fructis products?

1	2	3	4	5	6	7
not familiar						very familiar

2. How often do you use Fructis products?

1	2	3	4	5	6	7
not often						very often

3. Fructis has launched a new product

Shower Gel with Apple Scent

that has already been marketed in other parts of the country,

We would like to ask your opinion about how much this product similar with other Fructis products.

3a) how **similar** is shower gel with apple scent to other Fructis products?

1	2	3	4	5	6	7
dissimilar						similar

3b) How **representative** is shower gel with apple scent of other Fructis products?

1	2	3	4	5	6	7
unrepresentative						representative

3c) How **consistent** is shower gel with apple scent with other Fructis products?

1	2	3	4	5	6	7
inconsistent						consistent

3d) How well does shower gel with apple scent **fit** together with other Fructis products?

1	2	3	4	5	6	7
does not fit						fits very well

3e) How **typical** is shower gel with apple scent of Fructis products?

1	2	3	4	5	6	7
atypical						typical

3d) What would you say/think if you see **Fructis Shower Gel with Apple Scent** marketed in your area?

4. On the scale from 1 to 7 please answer the following questions about your attitude toward Fructis:

a) Fructis' Products are:

1	2	3	4	5	6	7
low quality						high quality

b) I will buy and try Fructis products

1	2	3	4	5	6	7
not at all likely						very likely

5. Do you like Fructis' products?

1	2	3	4	5	6	7
dislike						like

6. How do you feel about Fructis' products?

1	2	3	4	5	6	7
feel bad						feel good

7. On the scale from 1 to 7 please indicate how characteristics the following attributes are of Fructis brand products:

1	2	3	4	5	6	7
very characteristic						not characteristic

- 1) make your hair gentle;
- 2) are high quality;
- 3) are fortifying;
- 4) make your hair easy to comb;
- 5) have gentle smell;
- 6) are not trustworthy;
- 7) have a mixed fruit smell;
- 8) are designed based on the advances in science and technology;
- 9) have healthy treatment characteristics;
- 10) are more suitable for consumers who look for product image rather than performance characteristics;
- 11) make you hair shiny;
- 12) are more suitable for young people than for old people.

8. To what extent Fructis products vary on the following attributes?

1	2	3	4	5	6	7
little variability						a great deal of variability

Fructis products....

- 1) make your hair gentle;
- 2) are high quality;
- 3) are fortifying;
- 4) make your hair easy to comb;
- 5) have gentle smell;
- 6) are not trustworthy;
- 7) have a mixed fruit smell;
- 8) are designed based on the advances in science and technology;
- 9) have healthy treatment characteristics;
- 10) are more suitable for consumers who look for product image rather than performance characteristics;
- 11) make you hair shiny;
- 12) are more suitable for young people than for old people.

9. Do you agree with the following statements regarding Fructis products?

1	2	3	4	5	6	7
strongly agree						strongly disagree

Fructis products....

- 1) make your hair gentle;
- 2) are high quality;
- 3) are fortifying;
- 4) make your hair easy to comb;
- 5) have gentle smell;
- 6) are not trustworthy;
- 7) have a mixed fruit smell;
- 8) are designed based on the advances in science and technology;
- 9) have healthy treatment characteristics;
- 10) are more suitable for consumers who look for product image rather than performance characteristics;
- 11) make you hair shiny;
- 12) are more suitable for young people than for old people.

10. On the scale from 1 to 7 please indicate the likelihood of the following statement.

1	2	3	4	5	6	7
very likely						very unlikely

Fructis products...

- 1) make your hair gentle;
- 2) are high quality;
- 3) are fortifying;
- 4) make your hair easy to comb;
- 5) have gentle smell;
- 6) are not trustworthy;
- 7) have a mixed fruit smell;
- 8) are designed based on the advances in science and technology;
- 9) have healthy treatment characteristics;
- 10) are more suitable for consumers who look for product image rather than performance characteristics;
- 11) make you hair shiny;
- 12) are more suitable for young people than for old people.

11. On the scale from 1 to 7 please indicate to what extent Fructis products are different from each other on the following characteristics:

1	2	3	4	5	6	7
not at all different						very different

Fructis products...

- 1) make your hair gentle;
- 2) are high quality;
- 3) are fortifying;
- 4) make your hair easy to comb;
- 5) have gentle smell;
- 6) are not trustworthy;
- 7) have a mixed fruit smell;
- 8) are designed based on the advances in science and technology;
- 9) have healthy treatment characteristics;
- 10) are more suitable for consumers who look for product image rather than performance characteristics;
- 11) make you hair shiny;
- 12) are more suitable for young people than for old people.

12. On the scale from 1 to 7 please indicate the probability of the following statement characterizing Fructis products:

1	2	3	4	5	6	7
very probable						not probable

Fructis products...

- 1) make your hair gentle;
- 2) are high quality;
- 3) are fortifying;
- 4) make your hair easy to comb;
- 5) have gentle smell;
- 6) are not trustworthy;
- 7) have a mixed fruit smell;
- 8) are designed based on the advances in science and technology;
- 9) have healthy treatment characteristics;
- 10) are more suitable for consumers who look for product image rather than performance characteristics;
- 11) make you hair shiny;
- 12) are more suitable for young people than for old people.

13. What is your age?

14. What is your occupation?

THANK YOU VERY MUCH FOR YOUR TIME AND INPUT

APPENDIX 3.2: Questionnaire: Differences Primed Conditions

3. Fructis has launched a new product

Shower Gel with Apple Scent

that has already been marketed in other parts of the country,

We would like to ask your opinion about how much this product differ from other Fructis products.

3a) How **dissimilar** is shower gel with apple scent to other Fructis products?

1	2	3	4	5	6	7
similar						dissimilar

3b) How **unrepresentative** is shower gel with apple scent of other Fructis products?

1	2	3	4	5	6	7
representative						unrepresentative

3c) How **inconsistent** is shower gel with apple scent with other Fructis products?

1	2	3	4	5	6	7
consistent						inconsistent

3d) How badly does shower gel with apple scent **fit** together with other Fructis products?

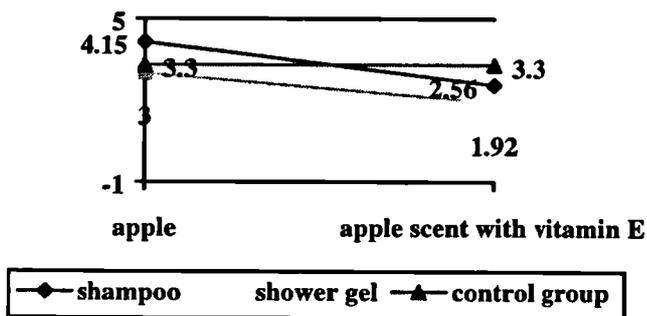
1	2	3	4	5	6	7
fits very well						does not

3e) How **atypical** is shower gel with apple scent of Fructis products?

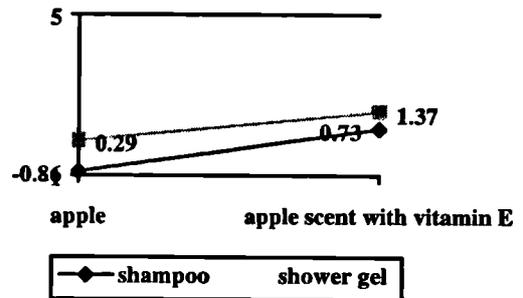
1	2	3	4	5	6	7
typical						

APPENDIX 4: Differences Primed Conditions - Changes in the Associations' Strength -

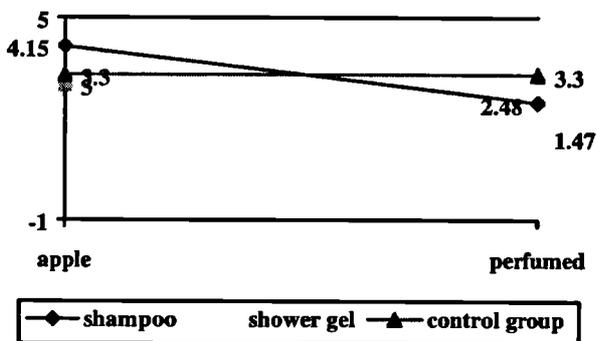
Differences primed condition fortifying association means



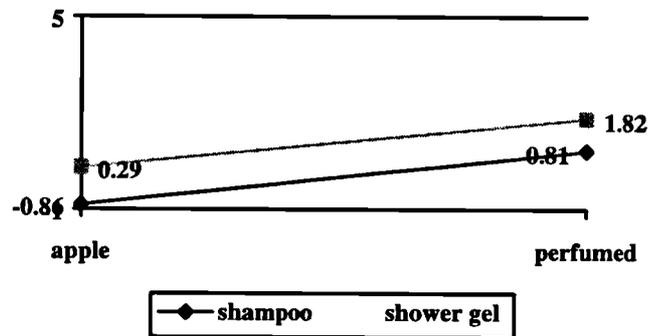
Differences primed condition fortifying association changes in means



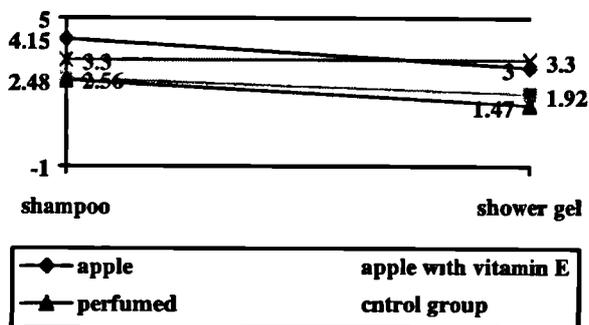
Differences primed condition fortifying association means



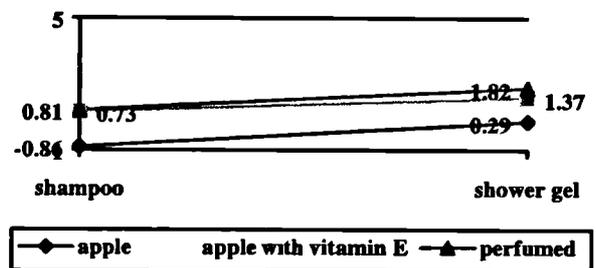
Differences primed condition fortifying association changes in means



Differences primed condition fortifying association means

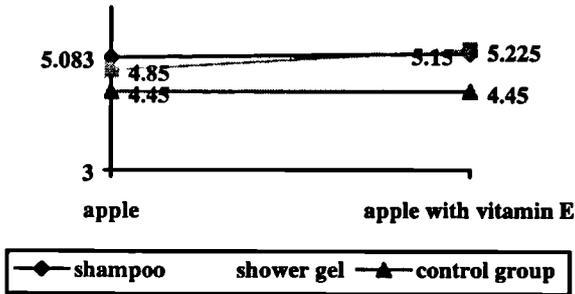


Differences primed condition fortifying association changes in means

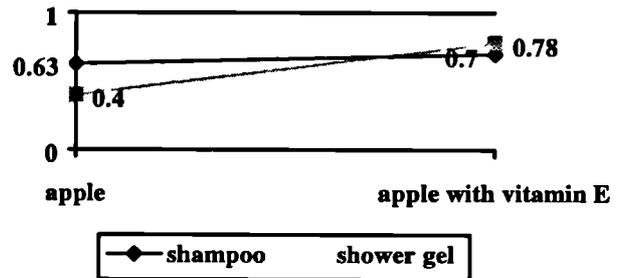


APPENDIX 5: Differences Primed Conditions - Changes in the Overall Attitude

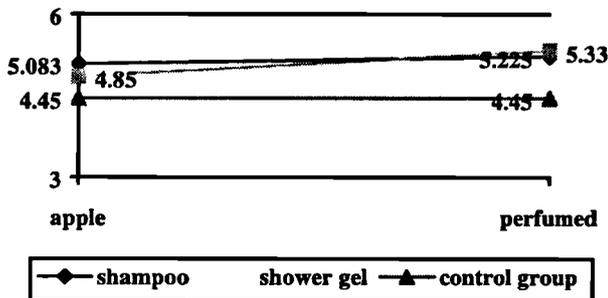
Differences primed condition overall attitude means



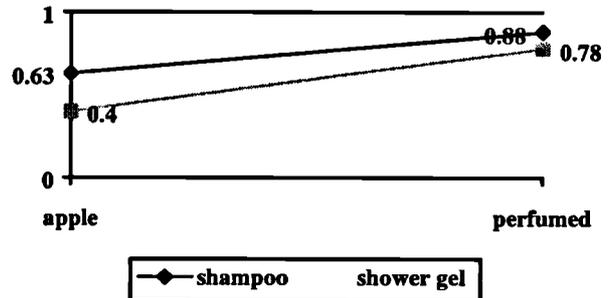
Differences primed condition overall attitude changes in means



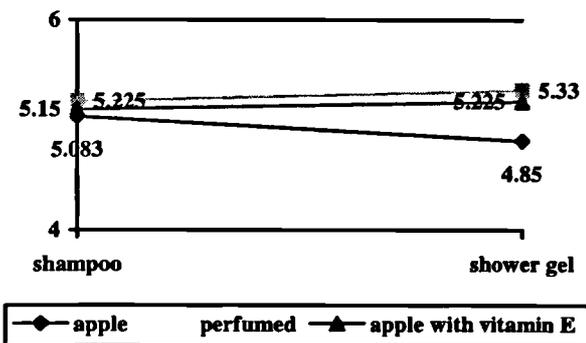
Differences primed condition overall attitude means



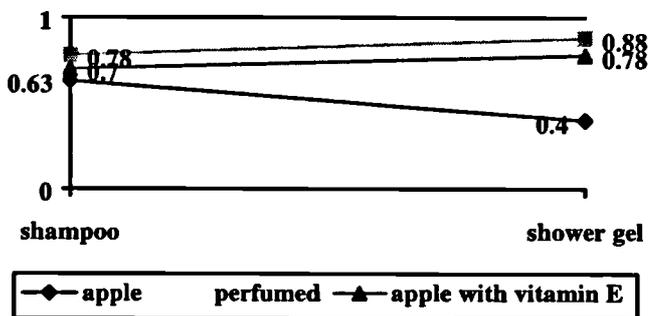
Differences primed condition overall attitude changes in means



Differences primed condition overall attitude means

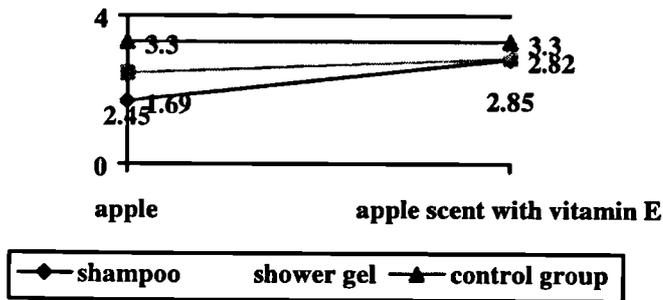


Differences primed condition overall attitude changes in means

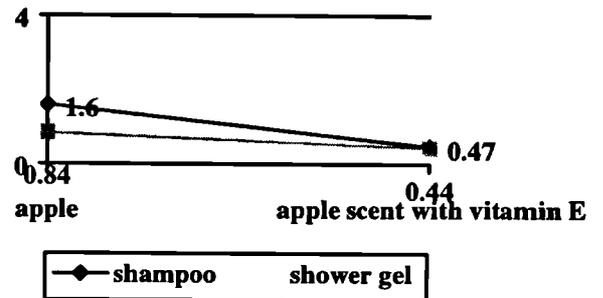


APPENDIX 6: Similarities Primed Conditions - Changes in the Associations' Strength

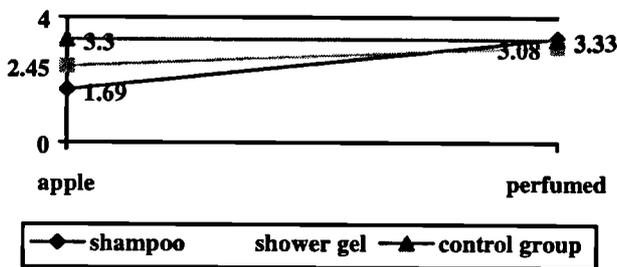
Similarities primed condition
fortifying association means



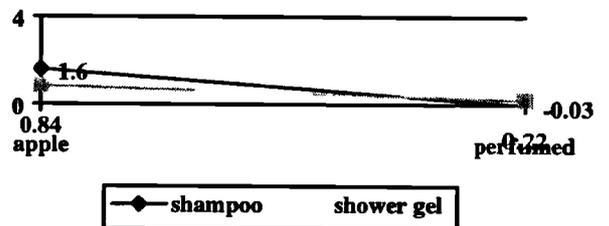
Similarities primed fortifying association
changes in means



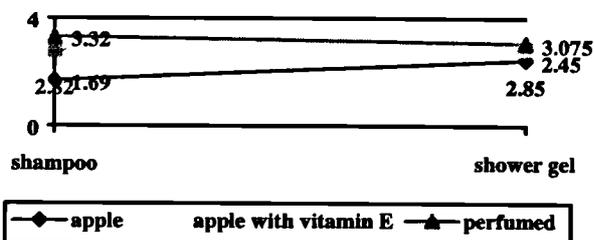
Similarities primed condition
fortifying association means



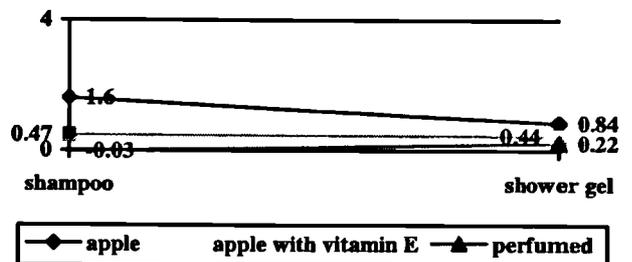
Similarities primed condition
fortifying association changes in
means



Similarities primed condition
fortifying association means

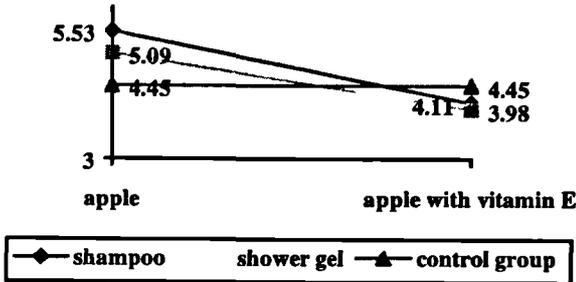


Similarities primed condition fortifying
association changes in means

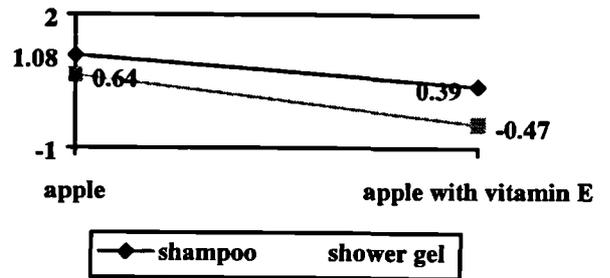


APPENDIX 7: Similarities Primed Conditions - Changes in the Overall Attitude

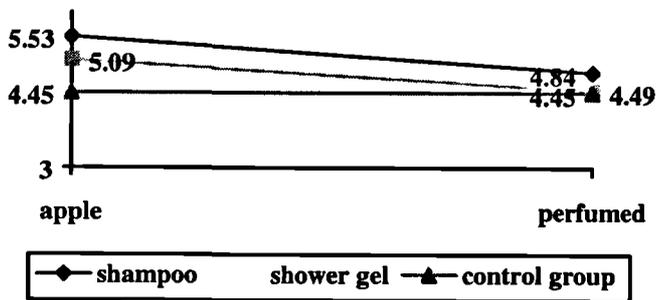
Similarities primed overall attitude means



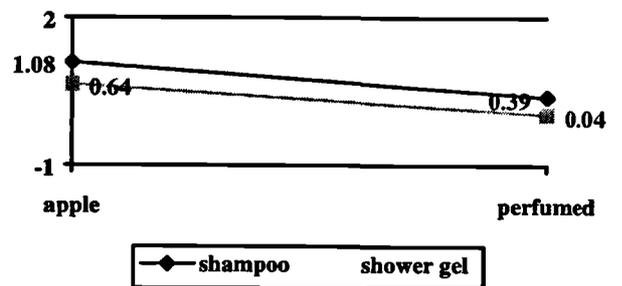
Similarities primed condition overall attitude means



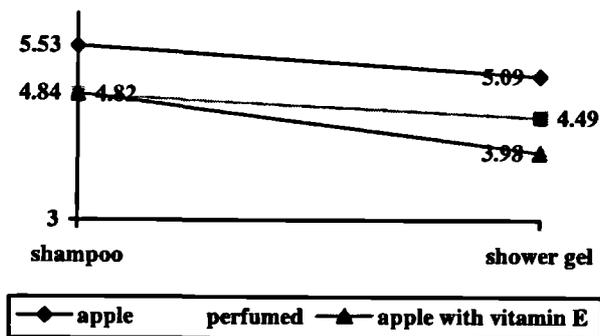
Similarities primed condition overall attitude means



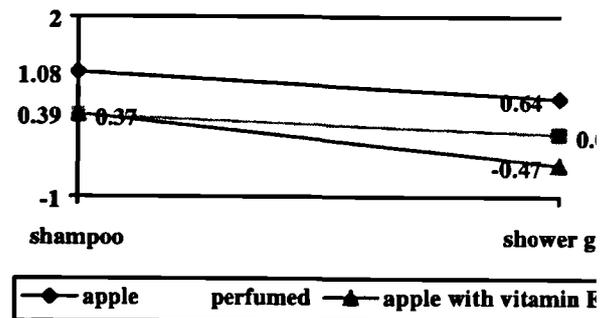
Similarities primed overall attitude means



Similarities primed condition overall attitude means



Similarities primed condition overall attitude changes in means



APPENDIX 8: Scales Correlations and Factor Loadings

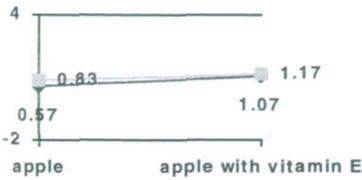
	<i>Alpha Cronbach for the four 7 point scales</i>	<i>Factor 1 "science and technology"</i>	<i>Factor 2 Performance benefits</i>	<i>Factor 3 Trustworthy (-)</i>
Total Cronbah alpha		0.81	0.76	0.62
Quality	0.9633	0.79707	0.18398	-0.02106
Fortifying	0.9071	0.79675	0.19606	-0.02918
Healthy treatment	0.9448	0.75664	0.10983	-0.02918
Technology	0.9369	0.73638	0.19117	0.03418
Makes hair gentle	0.9271	0.23047	0.77089	-0.10419
Makes hair shiny	0.97	0.25345	0.76073	-0.01194
Makes hair easy to comb	0.9394	0.31682	0.74238	-0.04178
Gentle Smell	0.8569	0.24460	0.61019	-0.15110
Mixed Fruit Smell	0.9326	-0.07709	0.50685	-0.07394
Not Trustworthy	0.8977	-0.1054	-0.02230	0.79214
More suitable for consumers who look for product image rather than performance characteristics	0.935	0.02194	-0.08991	0.73297
More suitable for younger rather than older consumers	0.9619	-0.06374	-0.14218	0.67979

APPENDIX 9.1: Differences Primed Condition – Analysis by Factor Apple Scent versus Apple Scent with Vitamin E

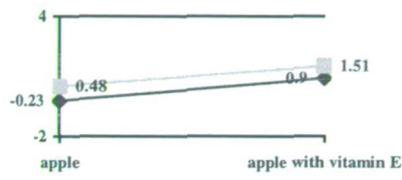
Changes in associations means by factors

	performance benefits		science and technology		trustworthy image	
	F	P	F	P	F	P
H3a-1: shampoo	4.74	0.0338	8.41	0.0053	2.3	0.1347
H3a-2: shower gel	5.16	0.0207	15.37	0.0002	6.83	0.0115

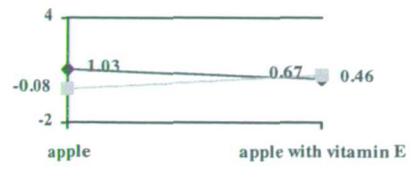
Differences primed condition benefits factor



Differences primed condition science and technology factor



Differences primed condition trustworthy image factor

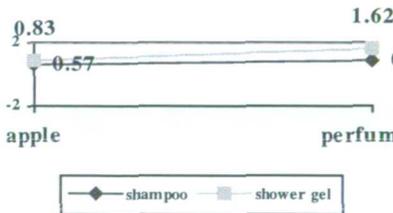


Apple Scent versus Perfumed Scent

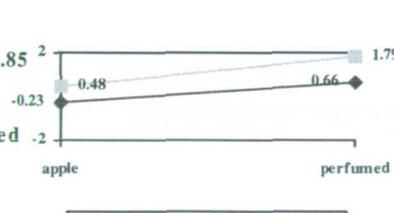
Changes in attitude means

	performance benefits		science and technology		trustworthy image	
	F	P	F	P	F	P
H3b - 1: shampoo	2.16	0.1474	4.94	0.0302	0.88	0.3509
H3b - 2: shower gel	58.27	0.0001	32.45	0.0001	12.06	0.001

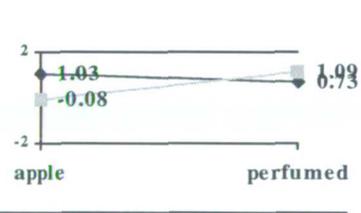
Differences primed condition benefits factor



Differences primed condition science and technology factor



Differences primed condition trustworthy image factor

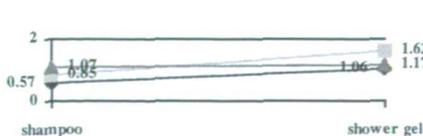


Shampoo versus Shower Gel

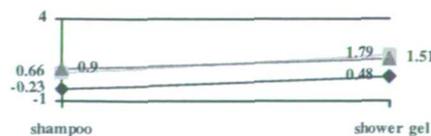
Differences primed - category main effect (shampoo vs shower gel)

	benefits		science and technology		trustworthy image	
	F	P	F	P	F	P
apple scent	2.39	0.1276	3.09	0.0839	10	0.0025
apple scent with vitamin E	0.39	0.5356	5.48	0.02	0.64	0.4289
perfumed scent	33.11	0.0001	23.41	0.0001	1.4	0.2408

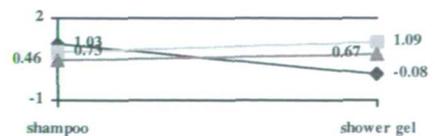
Differences primed condition benefits factor



Differences primed condition science and technology factor



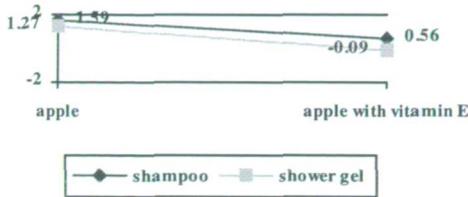
Differences primed condition nontrustworthy image factor



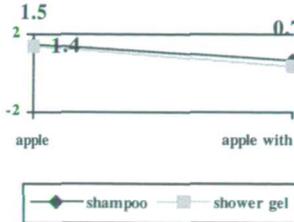
APPENDIX 9.2: Similarities Primed Conditions – Analysis by Factor Apple Scent versus Apple Scent with Vitamin E

Changes in attitude means by factors								
	Manova (all factors)		performance benefit		science and tech		trustworthy image	
	F	P	F	P	F	P	F	P
shampoo	29.1616	0.0001	58.99	0.0001	10.41	0.0022	19.1	0.0001
shower gel	13.0986	0.0001	32.98	0.0001	17.17	0.0001	11.12	0.0017

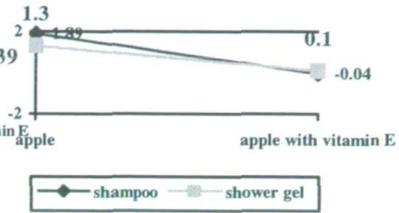
Similarities primed condition benefits factor



Similarities primed condition science and technology factor



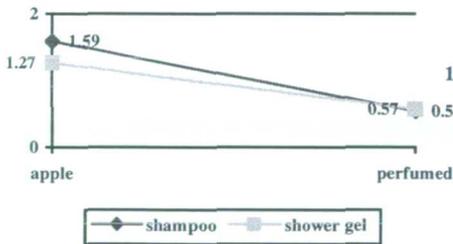
Similarities primed condition trustworthy image factor



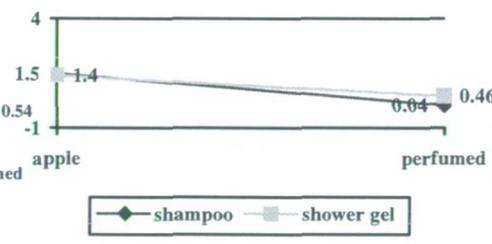
Apple scent versus perfumed scent

	Manova (all factors)		performance benefits		science and tech		trustworthy image	
	F	P	F	P	F	P	F	P
shampoo	27.778	0.0001	56.69	0.0001	25.17	0.0001	27.15	0.0016
shower gel	6.1656	0.0013	7.34	0.0094	9.14	0.004	18.67	0.0001

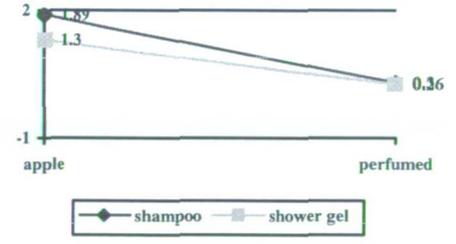
Similarities primed condition benefits factor



Similarities primed condition science and technology factor



Similarities primed condition trustworthy image factor

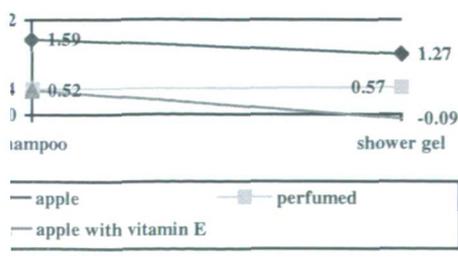


H4c: typicality primed - category main effect (shampoo vs shower gel)
Associations by factors changes

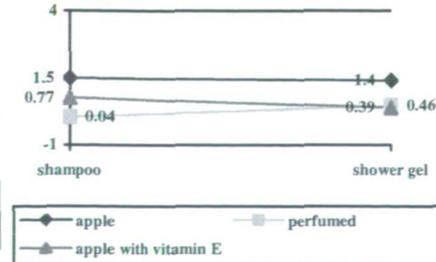
	Manova (all factors)		benefits		science and technology		trustworthy image	
	F	P	F	P	F	P	F	P
apple scent	1.3807	0.2634	3.56	0.066	0.14	0.7	1.12	0.2964
apple scent with vitamin E	3.8291	0.0146	11.38	0.0013	2.12	0.1513	0.12	0.7268
perfumed scent	1.444	0.24	0	0.99	2.79	0.1002	0.01	0.94

Shampoo versus shower gel

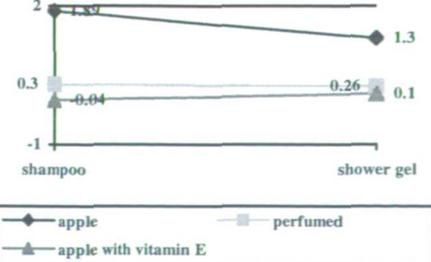
Similarities primed condition benefits factor



Similarities primed condition science and technology factor



Similarities primed condition trustworthy image factor

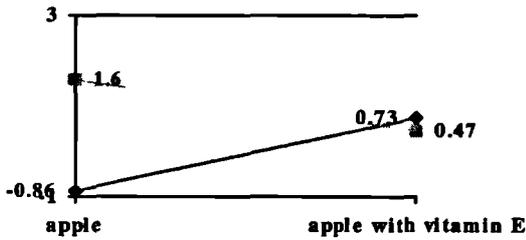


APPENDIX 10.1: Analysis of Interaction Effects (Dependent measure – changes in associations' strength)

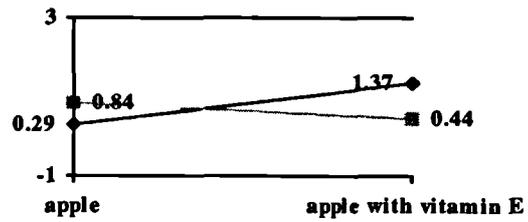
Incongruity operationalized as a number of incongruent attributes:

Apple scent versus apple scent with vitamin E

Shampoo fortifying association changes in means



Shower gel fortifying association changes in means



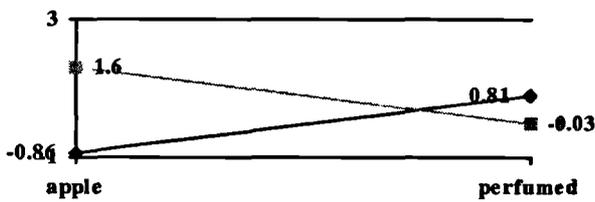
◆ differences primed ■ similarities primed

◆ differences primed ■ similarities primed

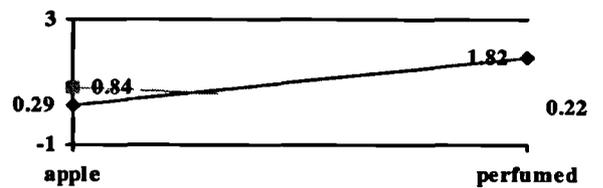
Incongruity operationalized as degree of attribute incongruity:

Apple scent versus perfumed scent

Shampoo fortifying association changes in means



Shower gel fortifying association changes in means



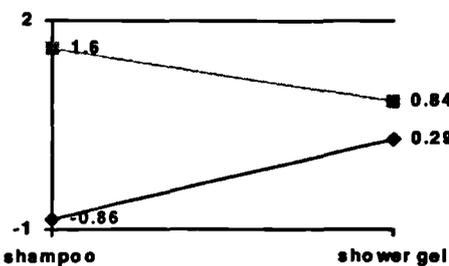
◆ differences primed ■ similarities primed

◆ differences primed ■ similarities primed

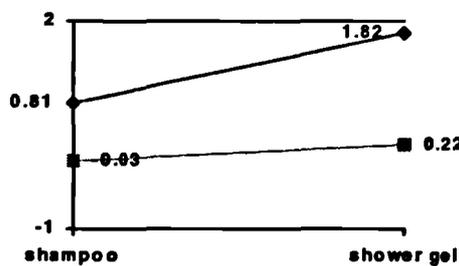
Incongruity operationalized as category distance:

Category effect – shampoo versus shower gel

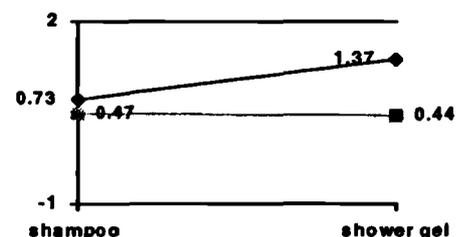
Apple scent fortifying association changes in means



Perfumed scent fortifying association changes in means



Apple scent with vitamin E fortifying association changes in means



◆ differences primed
■ similarities primed

◆ differences primed
■ similarities primed

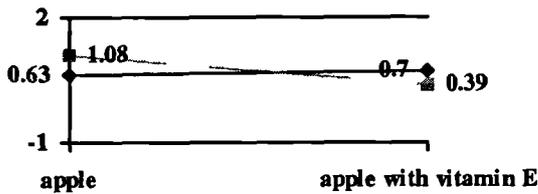
◆ differences primed
■ similarities primed

APPENDIX 10.2: Analysis of Interaction Effects (Dependent measure – changes in the overall attitude)

Incongruity operationalized as number of incongruent attributes:

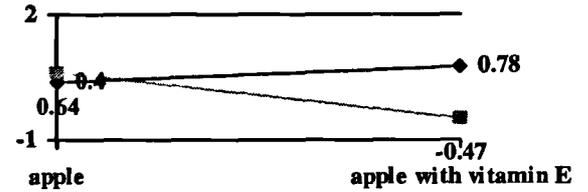
Apple scent versus apple scent with vitamin E

shampoo overall attitude changes in means



—◆— differences primed —■— similarities primed

Shower gel overall attitude changes in means

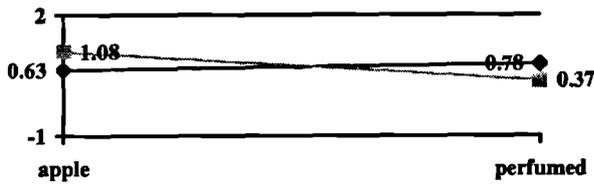


—◆— differences primed —■— similarities primed

Incongruity operationalized as degree of attribute incongruity:

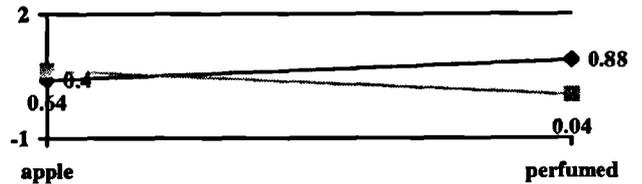
Apple scent versus perfumed scent

shampoo overall attitude changes in means



—◆— differences primed —■— similarities primed

Shower gel overall attitude changes in means

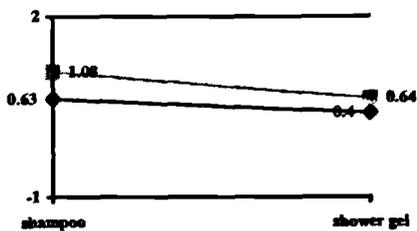


—◆— differences primed —■— similarities primed

Incongruity operationalized as category distance:

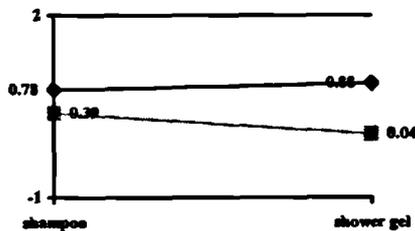
Shampoo versus shower gel

apple scent overall attitude changes in means



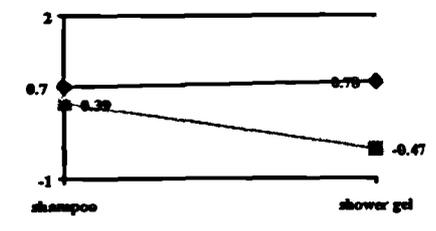
—◆— differences primed —■— similarities primed

perfumed scent overall attitude changes in means



—◆— differences primed —■— similarities primed

apple scent with vitamin E overall attitude changes in means



—◆— differences primed —■— similarities primed

APPENDIX 11.1: Analysis of Interaction Effects by Factors - Benefits Factor

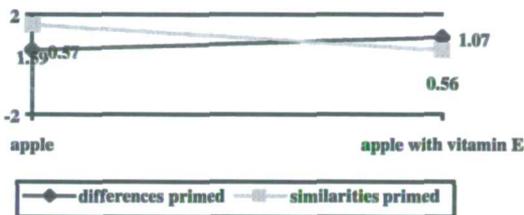
Interaction operationalization of incongruity by condition
Associations by factors

	benefits		science and tech		trustworthy image	
	F	P	F	P	F	P
S1a-1: shampoo apple scent versus apple scent with vitamin E	12.25	0.0001	8.66	0.0001	7.3	0.0002
S1a-2: shower gel apple scent versus apple scent with vitamin E	21.53	0.0001	10.85	0.0001	7.21	0.0002
S1b - 1: shampoo apple scent versus perfumed scent	13.69	0.0001	8.01	0.0001	7.81	0.0001
S1b - 2: shower gel apple scent versus perfumed scent	13.63	0.0001	13.63	0.0001	9.93	0.0001
S1c-1: apple scent shampoo versus shower gel	12.55	0.0001	9.78	0.0001	11.73	0.0001
S1c-2: apple scent with vitamin E shampoo versus shower gel	17.01	0.0001	8.04	0.0001	1.42	0.2411
S1c-3: perfumed scent shampoo versus shower gel	16.08	0.0001	16.08	0.0001	3.81	0.012

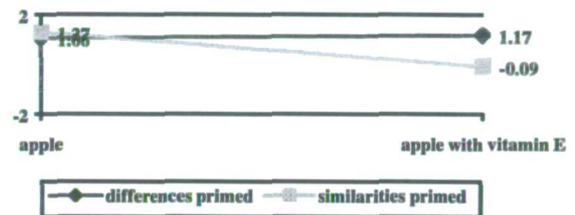
Benefits factor:

Apple scent versus apple with vitamin E

Shampoo benefits factor changes in means

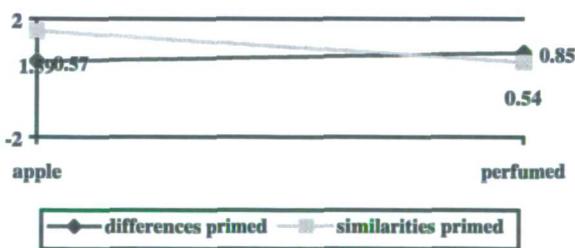


Shower gel benefits factor changes in means

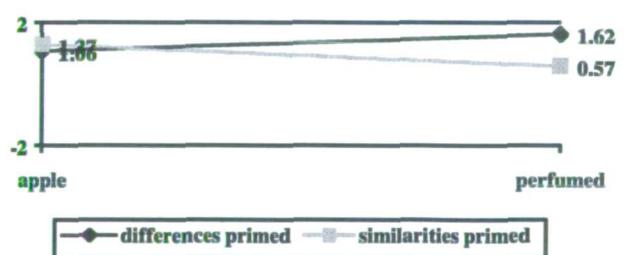


Apple scent versus perfumed scent

Shampoo benefits factor changes in means

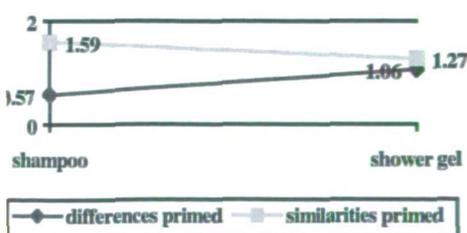


Shower gel benefits factor changes in means

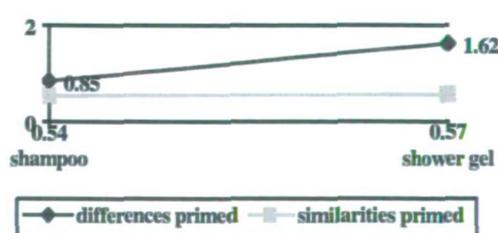


Shampoo versus shower gel

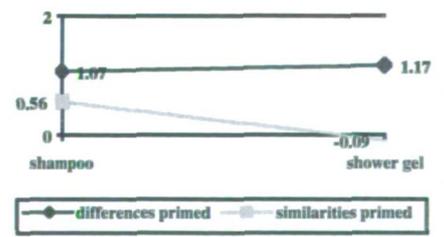
Apple scent benefits factor changes in means



Perfumed scent benefits factor changes in means



Apple scent with vitamin E benefits factor changes in means

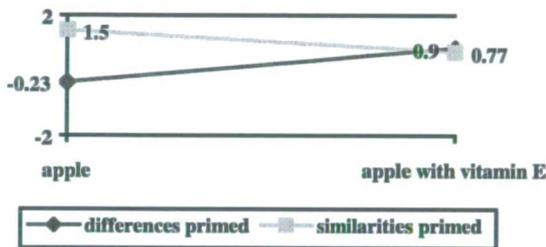


APPENDIX 11.2: Analysis of Interaction Effects by Factors – Science and Technology Factor

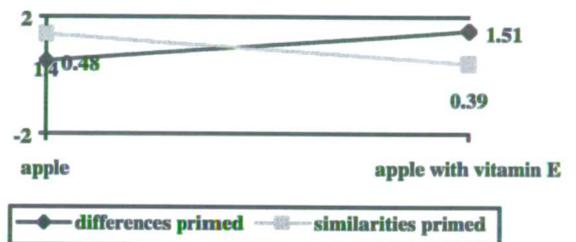
Interaction operationalization of incongruity by condition		
Associations by factors		
	science and tech	F
	P	
S1a-1: shampoo apple scent versus apple scent with vitamin E	8.66	0.0001
S1a-2: shower gel apple scent versus apple scent with vitamin E	10.85	0.0001
S1b - 1: shampoo apple scent versus perfumed scent	8.01	0.0001
S1b - 2: shower gel apple scent versus perfumed scent	13.63	0.0001
S1c-1: apple scent shampoo versus shower gel	9.78	0.0001
S1c-2: apple scent with vitamin E shampoo versus shower gel	8.04	0.0001
S1c-3: perfumed scent shampoo versus shower gel	16.08	0.0001

Science and technology factor: Apple scent versus apple scent with vitamin E

shampoo science and technology factor

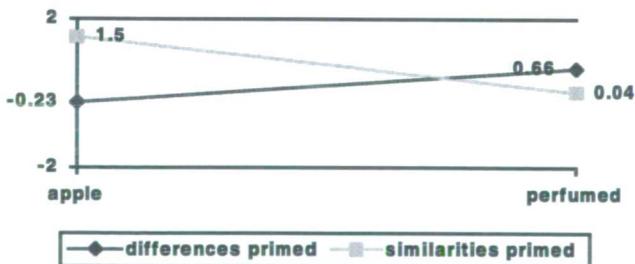


Shower science and technology factor

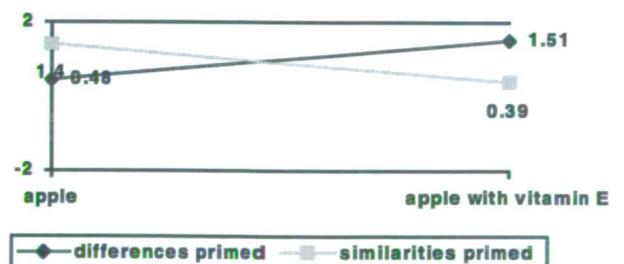


Apple scent versus perfumed scent

shampoo science and technology factor

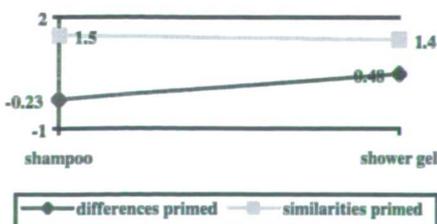


Shower science and technology factor

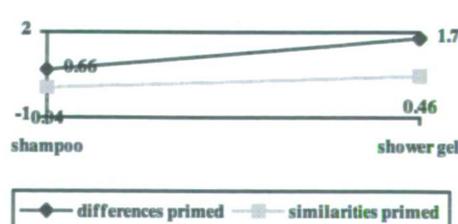


Shampoo versus shower gel

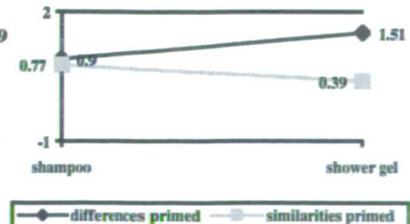
Apple scent science and technology factor changes in means



Perfumed scent science and technology factor changes in means



Apple scent with vitamin E science and technology factor changes in means



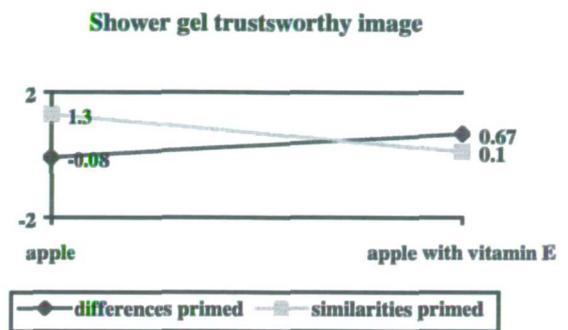
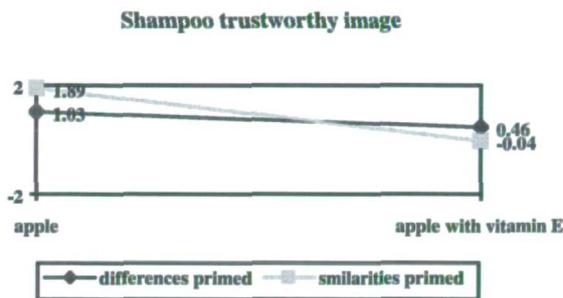
APPENDIX 11.3: Analysis of Interaction Effects by Factors – Trustworthy Image Factor

Interaction operationalization of incongruity by condition

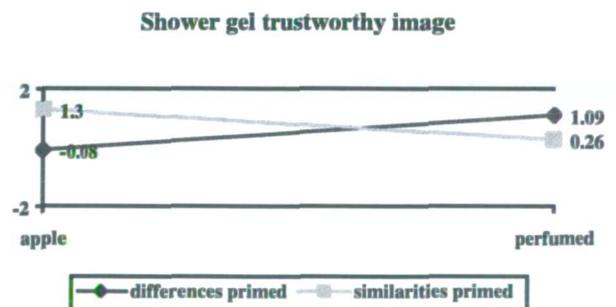
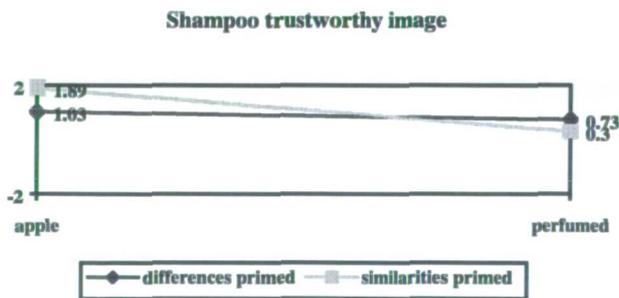
Associations by factors

	trustworthy image	
	F	P
S1a-1: shampoo apple scent versus apple scent with vitamin E	7.3	0.0002
S1a-2: shower gel apple scent versus apple scent with vitamin E	7.21	0.0002
S1b - 1: shampoo apple scent versus perfumed scent	7.81	0.0001
S1b - 2: shower gel apple scent versus perfumed scent	9.93	0.0001
S1c-1: apple scent shampoo versus shower gel	11.73	0.0001
S1c-2: apple scent with vitamin E shampoo versus shower gel	1.42	0.2411
S1c-3: perfumed scent shampoo versus shower gel	3.81	0.012

Trustworthy Apple scent versus apple scent with vitamin E

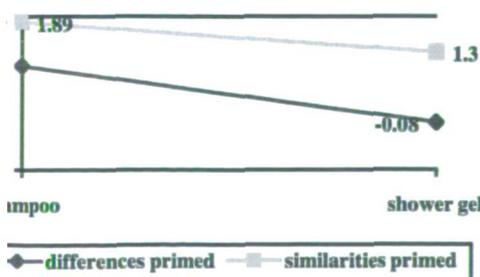


Apple scent versus perfumed scent

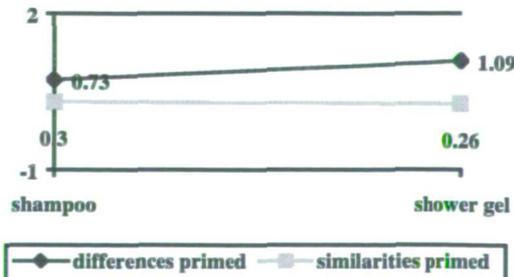


Shampoo versus shower gel

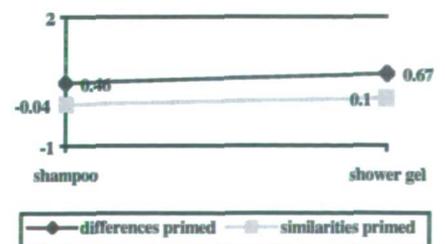
Apple scent trustworthy image changes in means



Perfumed scent trustworthy image factor changes in means



Apple scent with vitamin E trustworthy image factor changes in means



APPENDIX 12: Conditions Effects by Factor: Similarities versus Differences Priming Conditions

	MANOVA	Factors			Overall attitude
		Benefits	Science and technology	Trustworthy	
H5a-1: apple scent shampoo	8.0884*** p=0.0001	37.07*** p=0.0001	14.29*** p=0.0004	5.5* p=0.0231	2.06 p=0.1568
H5a -2: apple scent shower gel	2.7375*** p=0.0009	5.35** p=0.025	11.78** p=0.0012	18.74** p=0.0001	0.41 p=0.5259
H5b-1: apple scent with vitamin E shampoo	3.2614** p=0.0001	7.07* p=0.0102	0.96 p=0.33	1.16 p=0.2857	1.05 p=0.3093
H5b - 2: apple scent with vitamin E shower gel	6.4249*** p=0.0001	42.04*** p=0.0001	20.76*** p=0.0001	2.95* p=0.0914	21.5*** p=0.0001
H5b -3: perfumed scent shampoo	6.7218*** p=0.0001	3.19* p=0.0791	5.07* p=0.0282	2.35 p=0.1306	0.85 p=0.3607
H5b - 4: perfumed scent shower gel	6.6366*** p=0.0001	33.18*** p=0.0001	26.17*** p=0.0001	8.32** p=0.0056	6.9* p=0.01

Hypotheses is supported: *** - at 0.0001 level; ** - at 0.001 level; * - at 0.1 level;

Hypothesis is not supported: ---

