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**SEX DIFFERENCES IN IMAGES OF PLEASURE:
A STUDY OF FOOD PREFERENCES AND CONSUMPTION BEHAVIOR**

Dianne West

A Thesis
In
The John Molson School of Business

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ABSTRACT

Sex Differences in Images of Pleasure: A Study of Food Preferences and Consumption Behaviour

Dianne West

Pleasure is a key component of food consumption. It has traditionally been approached as one-dimensional, largely synonymous with taste. However, recent findings suggests that pleasure may be multi-dimensional, composed of social, emotional, intellectual, and sensory pleasures. Mental imagery, identified as an important component of hedonic consumption, may provide insight into the nature of pleasures experienced in food consumption. The goal of this thesis is to (1) determine whether multiple pleasures are identifiable and impact food consumption experiences and (2) whether these experiences vary for men and women, as sex is known to have an important impact on food consumption. Study 1 was largely exploratory and provided valuable insight into the types of pleasures and mental images associated with food and how these differ by sex. Study 2 was an experimental study designed to further our understanding of the impact of pleasure and mental imagery on consumption choices. In this study participants were required to view two advertisements for similar products, one familiar and one novel, and rate their attitude toward the ad, their attitude toward the product, and their purchase intention. Results indicate that the novelty of the product (whether the product is novel or familiar) as well as imagery (whether imagery is absent, is emotional, or is sensory) both have significant effects on these measures. However, the results for sex were not significant, requiring further investigation on this topic.

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TABLE OF CONTENTS

1. INTRODUCTION	1
2. LITERATURE REVIEW	5
2.1 Pleasure	5
2.2 Mental Imagery	12
2.3 Food Consumption and Sex Differences	17
3. STUDY 1: FOOD-BOURNE PLEASURES AND RELATED MENTAL IMAGERY ...	24
3.1 Design and Method	25
3.2 Results	31
3.3 Discussion	41
4. STUDY 2: THE IMPACT OF MENTAL IMAGERY AND PLEASURE ON THE DECISION BETWEEN FAMILIAR AND NOVEL FOODS	44
4.1 Experimental Design	46
4.2 Methodology	47
4.3 Results	51
4.4 Discussion	71
5. LIMITATIONS AND FUTURE RESEARCH	74
5.1 Limitations	74
5.2 Future Research	75
5.3 Managerial Implications	78
5.4 Conclusion	79
REFERENCES	81
APPENDICES	85
A: Study 2 Sample Questionnaire	86
B: Study 2 Advertisements	97

LIST OF TABLES

STUDY 1: FOOD-BOURNE PLEASURES AND RELATED MENTAL IMAGERY

Table 3.1	Type of Pleasure Code	26
Table 3.2	Contents of Image Code	27
Table 3.3	Social Setting Code	27
Table 3.4	Food Category and Sweets Code	28
Table 3.5	Pleasure Codes	30
Table 3.6	Breakdown of Images by Pleasure	32
Table 3.7	Breakdown of Images by Content	33
Table 3.8	Breakdown of Images by Social Setting	33
Table 3.9	Breakdown of Images by Food Category	34
Table 3.10	Breakdown of Images by Sweet Foods	35
Table 3.11	Breakdown of Text by Relation to Food Consumption.....	36
Table 3.12	Breakdown of Text by Social Pleasure	36
Table 3.13	Breakdown of Text by Intellectual Pleasure	38
Table 3.14	Breakdown of Text by Sensory Pleasure	40

STUDY 2: THE IMPACT OF MENTAL IMAGERY AND PLEASURE ON THE DECISION BETWEEN FAMILIAR AND NOVEL FOODS

Table 4.1	Mean Ethnic/Cultural Background by Gender	52
Table 4.2	Mean Diet and Lactose Intolerance by Gender	53
Table 4.3	Mean Familiarity with Various Products by Gender	53
Table 4.4	Mean Pleasure Associated with Various Products by Gender	54

Table 4.5	Mean Neophobia, Sensation Seeking, and Hunger by Gender ...	54
Table 4.6	Imagery Manipulation Check Results	56
Table 4.7	Wilks' Lambda, Yoghurt	56
Table 4.8	Attitude Toward the Ad, Yoghurt	57
Table 4.9	Attitude Toward the Product, Yoghurt	59
Table 4.10	Purchase Intention, Yoghurt	60
Table 4.11	Wilks' Lambda, Chocolate	62
Table 4.12	Attitude Toward the Ad, Chocolate	63
Table 4.13	Attitude Toward the Product, Chocolate	64
Table 4.14	Purchase Intention, Chocolate	67

LIST OF FIGURES

Figure 4.1	Yoghurt Purchase Intention: Imagery*Sex	61
Figure 4.2	Chocolate Attitudes toward the Product: Novelty*Imagery	65
Figure 4.3	Chocolate Attitude toward the Product: Novelty*Imagery*Sex	66
Figure 4.4	Chocolate Attitude toward the Product: Novelty*Imagery*Sex	66
Figure 4.5	Chocolate Purchase Intention: Novelty*Imagery	69
Figure 4.6	Chocolate Purchase Intention: Novelty*Imagery*Sex	70
Figure 4.7	Chocolate Purchase Intention: Novelty*Imagery*Sex	70

CHAPTER 1

INTRODUCTION

Pleasure, it seems, rules the world. An increasing number of articles in the trade press claim that it is the pursuit of pleasure that motivates today's consumer, who now more than ever seeks and is willing to pay for pleasure (Foroohar, 2001; Chevalier, 2000; Goldman, 1999). Consumer researchers have increased their efforts to understand the nature and properties of pleasure since Hirschman and Holbrook (1982) first called for more attention to the "multisensory, fantasy, and emotive aspects of product usage experience," (p. 82). However, there are still gaps in our knowledge of the impacts of pleasure on consumption.

Most pleasurable experiences have been considered as one dimensional, whereby physical or sensory pleasure is of primary importance. However, pleasurable experiences may include multiple pleasures, one or more identifiable pleasure (Pine and Gilmore, 1999). Dubé and Le Bel (2003) proposed that pleasure may in fact fall into four categories, including social, emotional, sensory (physical), and intellectual pleasure, a view that could have important implications for both researchers and practitioners.

By tapping into the mental images associated with pleasurable experiences, a greater understanding of hedonic consumption may be achieved. Though Hirschman and Holbrook (1982) first drew attention to the importance of mental constructs in hedonic consumption over twenty years ago, and seminal work by MacInnis and Price (1987) also maintained that mental imagery is a vital part of hedonic consumption, little research has been conducted to further examine the nature or the role of mental imagery in the experience of hedonic products. This is despite the potentially important function that

mental imagery plays in the pursuit and experience of pleasure. The goal of this thesis is to achieve a greater understanding of the role played by mental images in hedonic consumption. Food is the chosen domain of application in this thesis as it acts as an important source of pleasure for most people.

Pleasure is one of the first reasons reported for why certain foods are consumed (Rappoport, et al., 1993; Rappoport, et al., 1992). However, the association between pleasure and food generally focuses on taste or the sensory dimension of food to the extent that other types of pleasure associated with food have been virtually ignored (Ewing, Napoli, and Du Plessis, 1999). For instance, in a study of food advertising (Dubé, 1995), the sensory dimension of food was the dominant aspect of the advertising message. In food research, the spotlight has been on the often-conflicting use of food as a source of pleasure and tool for improved health (e.g. Mooney and Lorenz, 1997). Pleasure and health objectives have regularly been viewed as distinct, mutually exclusive reasons for eating. By consistently taking this approach, researchers are overlooking some potentially important motivations underlying food choices and eating behaviour, such as the possibility that health itself is pleasurable and may motivate consumption.

In this thesis the position is taken that despite the one-dimensional approach taken to pleasure in food research, pleasure associated with food may actually be more complicated than it has been depicted so far. Food research indeed hints at this complexity. For instance, emotions (Macht, 1999) and social reasons, such as consuming food with others present (Mooney and Lorenz, 1997; Rappoport et al., 1993), are known to influence food consumption. The richness and variety of emotions and social reasons associated with food suggests that the pleasure of food and eating must be equally varied

and complex. One objective of this thesis is to ascertain whether the consumer associates other pleasures with food and eating.

Another important issue surrounding consumption, including food consumption, is sex differences. Important differences between men and women suggest that pleasure, associated mental imagery, and resulting food consumption experience, will vary by sex. For instance, there is evidence that men and women do not process information in entirely identical ways (Myers-Levy and Maheswaran, 1991), which may be reflected in different food selections and associated mental imagery. Sex differences have been well-documented in food research. Mintz (2002) recently suggested that gender does indeed influence decisions made and meanings attached to food when noting that “food—what it is and what it symbolizes—has different significance according to gender” (p.27). In addition, Rappoport et al. (1993) suggest that all food research must consider the impact of sex as men and women are inherently different in their approaches to food consumption. This work by Rappoport and his colleagues indicates that a relationship between sex and food is a great deal more complex than a simple description of how men and women view pleasure/health. Men and women may not only attach different meanings to food, but associate different pleasures and mental images with these experiences. Insight may be gained by considering the hedonic component of food consumption and its tie to mental imagery.

The present thesis will make important theoretical and practical contributions, for a number of reasons. First, understanding the pleasure and mental imagery associated with consumption allows marketing professionals to better reach their consumers. With more money spent on food promotion than on any other product (Ewing, Napoli, and Du

Plessis, 1999) and with highly competitive and largely saturated food markets, understanding mental representations can help marketers to better promote their products and reach consumers through hedonic appeals. Indeed, it has been suggested that in order to expand food sales, food marketing professionals may be better aided by increasing value to consumers by enhancing desirability rather than selling more of the same product (Lahlou, 1995). Second, pleasure may be the key to understanding the nature of food-related pathologies. This is an important factor when considering the over-indulgence of food, which is evident with the growing rate of obesity in North America, as well as the avoidance of food and the obsession with exercise (Rozin, Pelchat, and Fallon, 1986). Third, this topic reaches into a new area of pleasure research, focusing on the mental images associated with a pleasurable experience, specifically food consumption. This extends our knowledge of sex differences through a product of great importance for both men and women. It may eventually improve consumers' welfare by expanding the range of recognized pleasures beyond the sensory dimension.

In this thesis, literature and a conceptual framework are presented dealing with the experience of pleasure, mental imagery and its function in consumption experiences, and both pleasure and sex differences associated with food consumption. The conceptual framework is followed by two studies. In Study 1 a qualitative approach is taken to examine the pleasures and mental images associated with food. In Study 2 a quantitative approach is used to examine the impacts of pleasure and opportunity to engage in mental imagery on consumption choices.

CHAPTER 2

LITERATURE REVIEW

There are three main sections to the following literature review. The first section focuses on pleasure, including its traditional and current conceptualization. This section includes evidence in support of the idea that multiple pleasures are associated with food consumption and can be clearly identified.

In the second section, mental imagery and its role in consumption will be considered. Research supporting the significantly strong influence of mental imagery on consumption choices and experiences is provided. In addition, techniques used to analyze the mental images associated with pleasurable experiences will also be discussed. In both of these sections, where applicable, food consumption and sex differences in hedonic responses and mental imagery will be taken into account.

In the third section, food consumption, specifically consumption related to sex differences, is examined. The similarities and differences in the approach of men and women to food consumption will be considered, specifically in terms of pleasure.

2.1 Pleasure

There are two opposing views that need to be considered when examining pleasure research. These two views are the unitary and differentiated perspectives (for an extensive review see Dubé and Le Bel, 2003). One main point of distinction between these two approaches is how antecedents leading to experiences of pleasure are viewed. In the unitary perspective, individual antecedents and emotions are not considered of

central importance to understanding hedonic experiences. However, in the differentiated perspective, pleasurable experiences are described by a large number of antecedents, which lead to a variety of different pleasures. Until recently the unitary perspective has dominated pleasure research, with the differentiated perspective lacking solid empirical support. Dubé and Le Bel (2003) have examined laypeople's concept of pleasure, resulting in substantial empirical support for the idea that both the unitary and differentiated perspectives are important components of pleasure. In this section, each perspective and how it relates to food consumption will be briefly considered as well as sex differences in experiences of pleasure.

2.1.1 The Unitary Perspective. Pleasure has been alternatively defined as enjoyment, satisfaction, or simply a pleasant sensation. Humans are known to actively pursue what is pleasurable and avoid what is painful. In the Oxford English Dictionary (2002), pleasure is defined as “the condition of consciousness or sensation induced by the enjoyment or anticipation of what is felt or viewed as good or desirable; enjoyment, delight, gratification. The opposite of pain.” This definition is exemplary of the unitary perspective as the antecedents leading to pleasure are largely ignored. While supporters of the unitary view do not contest the existence of various antecedents, which may be affective as well as sensory, they do not view these antecedents as important. This is largely attributed to the view that these experiences are idiosyncratic and cannot be clearly captured, and are thus generally placed into a summary of good/bad. Hence, while experiencing levels of intensity in pleasure is possible, an event is either viewed as pleasurable or not pleasurable (good or bad). Though it is recognized that different antecedents and experiences may lead to pleasure, these are considered irrelevant because

it is the ultimate summaries of good and bad that guide behaviour. Therefore, the nature of the pleasure is not important. For instance, the consumption of an apple may bring an individual pleasure, but the quality of this pleasurable experience, such as the delicious taste of the apple or whether it is a shared experience, is not considered—whether pleasure is obtained or not is the only outcome of importance.

In the decision sciences, the unitary perspective is closely linked to experienced utility, the concept that pleasure and pain both direct and determine our actions. Individuals are generally believed to have certain behaviours and make decisions with the goal of maximizing utility (Kahneman, Wakker, and Sarin, 1997). While pleasure acts as a motivator in the decision making process, distinct experiences and their affective aspects are not considered important in experienced utility.

In physiology, the unitary perspective has also been applied. Often the basic measurement of pleasure under the unitary perspective has been in terms of sensory, or physical, outcomes and responses. Most notably, physiologist Michel Cabanac (1971), a significant contributor to the unitary perspective, coined the term *alliesthesia* to describe how the body experiences pleasure. Essentially, “a given external stimulus can be perceived either as pleasant or unpleasant, depending upon signals coming from inside the body” (p.1105). Thus, whether something is pleasurable depends to a large extent on a person’s internal state. For example, if someone is experiencing hunger, their favourite meal will most likely be very pleasurable for them. If they are not hungry, however, the same meal may not bring pleasure as their internal state does not signal the need for food consumption. In this sense, Cabanac views pleasure as synonymous with usefulness—if something is pleasant then it will also be useful. It is clear that the unitary perspective is

closely linked to motivation and behaviour as the presence or absence of pleasure impacts both. Pleasure acts as the common exchange currency between conflicting motivations, so pleasure is not only a goal but also the basis on which decisions are made and behaviours are carried out (Cabanac, 1971).

This concept of alliesthesia is closely linked to adaptation, as is the unitary perspective, whereby pleasure serves an integral purpose for survival. Cabanac (1971) proposed that it is an adaptive behaviour that humans actively seek pleasant stimuli and attempt to avoid unpleasant stimuli. As pleasure is indicative of usefulness, humans are instinctively able to determine what they need. As Cabanac notes, behaviour is adapted to meet this physiological need. Similarly, Zajonc (1980) suggested that people do not need to determine what is pleasurable and what is not pleasurable, they are instinctively able to determine both. It is evident in this perspective that the antecedents are not a central component of this relationship, only the general experiences of pleasure or displeasure are important.

2.1.2 The Differentiated Perspective. In the unitary perspective, antecedents and affective qualities are summarized into overall judgements of good/bad. This is not the case in the differentiated perspective where both antecedents and their affective qualities are considered to be of utmost importance. These are thought to result in the experience of different types of pleasure. Essentially, in the differentiated perspective, the quality of the experience is as important as the experience itself.

In this perspective, distinct pleasures are thought to exist (e.g. Kubovy, 1999; Tiger, 1992) but it is only recently that these distinct pleasures have been empirically validated. Dubé and Le Bel (2003) studied the content and structure of pleasurable

experiences of laypersons, finding that four distinct and equally important pleasures contribute to an overall feeling of pleasure and must be considered. These pleasures roughly reflect those of Tiger (1992) and include social, emotional, intellectual, and sensory pleasures. Social pleasures emerge from social situations, such as spending time with friends or even alone, emotional pleasure is internal, including the feeling of comfort, intellectual pleasure may include the feeling of accomplishment and achievement, and sensory pleasure is obtained through physical sensations, such as eating. Dubé and Le Bel acknowledged that each of these pleasures is accompanied by specific emotions. Using the example of the apple, consumption may not only bring pleasure, but the pleasure received may be more specific, such as social, because the apple is consumed during a picnic with friends.

In addition to documenting four distinct types of pleasure, Dubé and Le Bel (2003) found support that these four pleasures are not mutually exclusive. Hence, more than one type of pleasure may be experienced simultaneously. While pleasure may be one of the main objectives of food consumption, a person may not only experience different pleasures, but more than one pleasure at the same time. The ability to experience more than one pleasure simultaneously can also be drawn from the example of the apple. For instance, in addition to experiencing social pleasure, an individual may also experience physical pleasure due to the taste of the apple.

As in the unitary perspective, the adaptive nature of differentiated pleasure has been recognized. However, in the differentiated perspective the adaptive benefits of experiencing multiple pleasures, including social, emotional, intellectual, and physical pleasure, is also emerging. In this view, each pleasure serves a special function in

helping humans to meet their objectives of survival and reproduction. While the possibility of multiple pleasures serving a purpose has not been extensively considered, there are some indications that it is an important area of consideration for food researchers. For instance, Abrams (1987), while highlighting that the earliest humans were omnivorous, also notes the preference for animal protein and fat, which may have evolutionary roots.

Researchers have begun to distinguish between these four pleasures and their adaptive roots. Dubé and Le Bel (2003) highlighted a mind/body dichotomy whereby intellectual and emotional pleasures resulted from antecedents involving work of the mind. Social and physical pleasures are largely synonymous with pleasures of the body. They subsequently found that there is a “distinction between physical and social pleasures as simpler, evolution-based pleasures and intellectual and emotional pleasures as more complex ‘pleasures of the mind’.” Damasio (1999) has also highlighted the evolutionary nature of various pleasures. He recognized that antecedents resulting in sensorial and social pleasures involve different anatomical structures which are not the same as those involving more complex processes.

2.1.3 Pleasure and Sex Differences. Sex differences have not received substantial attention in pleasure research, however, there are indications that men and women do differ on a number of levels. Le Bel and Dubé (1998) through interviews with laypersons uncovered two characteristics of pleasurable experiences which are of particular relevance when considering the role of sex in the pursuit of pleasure. First, they found that pleasure is idiosyncratic. The individual has a substantial influence on the nature of the pleasure experienced; the pleasure experienced may vary between men

and women as well as within each group. Hence, what is pleasurable to one individual may not be equal for another individual. In fact, the very same activity may lead to different types of pleasurable experiences for different individuals. For instance, the consumption of sushi may be a very exotic, somewhat intellectual experience for some, and for others its pleasure may rest solely in its taste. Second, Le Bel and Dubé found that context and goal are critical factors in the nature of pleasure sought and experienced. It is reasonable to expect that as women and men are very different, and the contexts in which they engage themselves can vary substantially, the pleasures they seek and experiences they have may also differ.

It is possible that due to the adaptive nature of experiencing pleasure, combined with the crucial role of food consumption, that men and women will vary in terms of the pleasure they associate with various foods. Indeed, sex differences have been extensively documented in approaches to food consumption, which may be linked to pleasure. Evolutionary psychologists have focused on sex differences resulting from the problems of survival and reproduction. They propose that men and women have a different biological and psychological makeup and have developed different strategies to meet their needs (Buss, 1995). Indeed Rozin (1995) asserts the importance of biological, psychological, and cultural factors on food consumption. Similarly, Mintz (2002) acknowledges that food symbolizes different things depending on sex, which is in no doubt influenced by cultural differences. This is something that will be further discussed in the section on food and gender.

2.2 Mental Imagery

While mental imagery has a rich, though somewhat conflicting history (Pinker and Kosslyn, 1983), it may provide key insight into the pursuit of pleasure and its motivational power. In this sense, the experience that a consumer has will depend on the mental imagery they experience during consumption (Hirschman and Holbrook, 1982). If humans are equipped with a complex mental framework, it is not surprising that they may also have an accompanying set of complex mental images related to pleasure. Ledoux (1996) acknowledged that the experience of pleasure might be accompanied by various factors and influences, such as mental images, which may operate outside of awareness. Though marketers and researchers have recognized that mental imagery has a significant impact on hedonic consumption, we still know relatively little about its role in consumption decisions and behaviours. Mental imagery is privately experienced, making it inherently difficult to observe as well as understand. Four aspects of mental imagery are considered in this section. First, mental imagery is defined, second, a number of key antecedents of mental imagery are considered, and third, several of the influences of mental imagery on consumption are taken into account. Finally, two techniques to induce and study mental imagery are discussed.

2.2.1 Conceptual Definition of Mental Imagery. MacInnis and Price (1987) defined mental imagery as “a process (not a structure) by which sensory information is represented in working memory” (p. 473). By defining mental imagery as a process, MacInnis and Price, following from Yuille and Catchpole (1977), considered mental imagery as a tool with which to manage information. Mental images are not stored, but detailed information leading to mental images is stored.

Although the purpose of mental imagery has been subject to debate, MacInnis and Price (1987) view mental imagery as a manner by which information is processed. They distinguished mental imagery from traditional information processing strategies, termed *discursive processing*, which relies heavily on the use of words and numbers in working memory to solve problems.

Mental imagery is particularly unique from discursive processing because of its strong link to past sensory experiences. In terms of sensory information, MacInnis and Price (1987) highlighted the distinct multisensory nature of mental imagery, which involves concrete sensory representations of ideas, feelings, and memories. Though mental imagery is presumed to be multisensorial, an overwhelming focus in the processing of mental imagery has been placed on visual imagery (Ellen and Bone, 1991). Kosslyn, Seger, Pani, and Hillger (1990) found, when analyzing the daily mental images of participants, that over half of the mental images were visual in nature. However, they also found that auditory imagery, often involving music, though much less common than visual imagery, was much more vivid.

2.2.2 Vividness in Mental Imagery. Mental imagery is thought to be more concrete than discursive processing due to its multisensory nature. These senses can have a large impact on imagery, affecting both the depth of the images and the influence of the images on decision making (Richardson, 1983). Both the information to which individuals exposed and individual differences have a strong influence on the type and intensity of mental imagery and individual experiences. For instance, some individuals may store very complete scripts of an experience, leading to very vivid mental images, as

opposed to those individuals who possess incomplete or less detailed scripts (MacInnis and Price, 1987).

Vividness and controllability are the two main characteristics used to describe mental images (Richardson, 1969). Vividness, or the clarity of an image, is arguably the most researched aspect of mental imagery. Other facets of imagery, such as controllability, or the degree to which images can be retained in the mind or changed according to will, have been considered, though not to the same extent as vividness. It is generally believed that images of greater vividness are more influential in the decision making process.

The way individuals store information influences the vividness of images. Individuals with well-developed scripts are thought to experience more vivid images compared to those with lesser-developed scripts (MacInnis and Price, 1987). In addition, the information to which they are exposed can also impact the level of vividness. Nisbett and Ross (1980) classified information as vivid depending on three characteristics: whether it is interesting to individuals on an emotional level, whether it is concrete and provokes mental imagery, and whether it is close to the individual in a sensory, temporal, or spatial way. Ellen and Bone (1992) discovered that focal character, whether the individual views himself or herself in a given scenario, and plausibility of a given scenario tend to create more vivid mental images. It has been proposed that an increase in the vivid attributes of a product may lead to an increase in mental imagery, resulting in the selection of certain products over others (Ellen and Bone, 1992; Hirschman and Holbrook, 1982; Shiv and Huber, 2000).

2.2.3 Mental Imagery and Consumption. Mental imagery has generally been found to influence consumption experiences, both from a theoretical and empirical approach. From a theoretical stance, Hirschman and Holbrook (1982) proposed that mental constructs influence consumption in four ways. *First*, emotional desires lead to the selection of hedonic rather than utilitarian products; if there are two products to choose from, the more hedonic product will be selected over the more utilitarian option. *Second*, subjective meanings supplement concrete attributes. Here they highlighted the importance of the symbolism in consumption as products may be chosen that are high in meaning, as opposed to tangible attributes. *Third*, mental constructs influence reality, as people develop a skewed concept of what is actually occurring, instead focusing on desired reality as opposed to actual reality. *Fourth*, there is a division between sensory-emotive stimulation and cognitive information seeking. Some people may be more likely to pursue sensory-emotive benefits while others are more swayed by cognitive information. These propositions, while largely untested, do highlight the potential persuasion that mental imagery has in turning attention towards hedonic alternatives.

Researchers have attempted to map the relationship between advertisements and mental imagery. Indeed, there are a number of indications that mental imagery can be influenced by the advertisements to which consumers are exposed. Alesandrini and Sheik (1983) noted the usefulness in using pictures to create vivid advertising strategies and capture the attention of consumers. Burns, Biswas, and Babin (1993) found that concrete wording is useful in producing mental imagery, positive attitudes, and intentions to purchase. Burns, Biswas, and Babin (1993) also found indications that mental imagery was greater among subjects who considered ads as more believable. This realism

influences the vividness and quantity of mental images as well as subsequent attitude towards the advertisement under scrutiny (Ellen and Bone, 1992). Higher levels of mental imagery have been found to draw consumer attention and preference towards more hedonic products (Shiv and Huber, 2000).

2.2.4 Exploring Mental Images. Mental imagery is particularly difficult to study because it cannot be examined directly. Currently two approaches prevail in understanding the influence of mental images consumption, each focusing on a different aspect of the imagery experience.

The Zaltman Metaphor Elicitation Technique (ZMET), a qualitative approach designed by Zaltman and Cloutier (1995), is based on the idea that understanding that most communication is nonverbal and the images consumers associate with their consumption experiences can lead to greater insight. To begin with, participants are provided with a topic (such as “pleasure”). Participants then select images that illustrate their views and definition on a specific topic. After the collection of these images, an intensive semi-structured interview takes place around these images. In addition to discussing each of the images, participants are asked to sort images into meaningful groups. The purpose of this process is for the researcher to explore the meaning behind the selections of the individuals by using metaphors, which aid in uncovering distinct mental models and provide useful insights into the changing needs and preferences of consumers.

A second method to explore mental imagery is more quantitative and focuses on mental imagery experienced concomitantly with consumption. Thought imagery, whereby imagery is voluntary and can be stimulated via instructions from an external

source, can aid researchers in understanding how various conditions affect mental imagery (Burns, Biswas, and Babin, 1993). The mental imagery process can be stimulated using various imagery-eliciting aids employed, such as pictures, concrete words (MacInnis and Price, 1987). The level of mental imagery experienced may also be manipulated by providing instructions that limit participant abilities to imagine by allocating cognitive resources to other tasks (McGill and Anand, 1989, 1994; Shiv and Huber, 2000). This allows for a comparison to be made between those who are able to imagine, and those that have restricted abilities. Using the techniques briefly outlined here allows for the exploration of mental imagery associated with a specific consumption domain as well as the investigation of differences in mental imagery ability.

In study 1, the first approach to mental imagery will be considered. In this qualitative study the ZMET is adapted to investigate mental images associated with food. In study 2, a quantitative study, mental imagery itself will be manipulated. The purpose of using both methods is to gain greater insight in the relationship mental imagery has with food consumption and how the presence or absence of mental imagery affects consumption decisions.

2.3 Food Consumption and Sex Differences

While the attitudes and behaviours of consumers towards food consumption do not generally exhibit substantial change over time, the changes that have occurred in food consumption are staggering (Hoch, 2002). Hoch noted, for instance, that in the U.S., consumption of frozen potatoes has increased by 100% from 1970 to 2000. With the realization of such significant changes, Hoch indicated that it is time for consumer

researchers to allocate more attention to food as a serious and worthwhile domain of research. This is supported by a number of other findings. First, food is highly hedonic in nature (Rappoport et al., 1992). Second, it is one of the largest marketed products (Ewing et al., 1999). Third, engaging in food-related activities is one of the main ways that humans spend their time, second only to sleeping (Rozin, 1995). In this section attention is drawn to differences between the sexes in food consumption and the need for further consideration of the impact of pleasure and its associated mental imagery in food consumption.

2.3.1 Sex Differences in Food Preferences. Sex is a significant determinant of food consumption behaviour and demands attention in any model of food cognition (Rappoport et al., 1993). As the present thesis is concerned with pleasures, which include both affective and cognitive components of food consumption, sex differences must also be taken into account. As Grunert (1994) highlighted, it is to be expected that men and women are different in their approaches to food, as women are exposed to different information than men, are the target of food advertising, and are the main provider and planner of meals in the household. Mintz (2002) also supports that food has different significance to men and women. He notes that “men and women have powerful, often different, concepts of what individuality is and how to achieve it” (Mintz, 2002, p. 25). Mintz has spoken to the distinctiveness of men and women in their food consumption behaviour. He also notes that men and women do not even appear to want to eat alike.

Attitudes and Beliefs. Sex differences in attitudes towards food are clear when considering sweet or snack foods. Conner (1994) found that men have less negative views of snacking. Interestingly, Laeng, Berridge, and Butler (1993), in a study that

compared the pleasantness of sweet drinks with level of hunger, concluded that women experience more negative affect in indulgence of cravings for sweet items. Thus, even if women do crave the same foods as men, they are often wary of satisfying those cravings due to their negative perception of certain foods. In accordance with findings concerning sweet and snack foods, men and women also differ in their opinions of healthier items, such as meats and vegetables. Women report preferences for foods that are lower in calories, such as vegetables and fruit (Logue and Smith, 1986; Rappoport et al., 1992).

Social Norms. It is likely that food consumption is somewhat influenced by the social meanings attached to eating. As noted by Belasco (2002, p. 3), “the way food is produced, prepared and consumed, generally reflects a society’s gender roles.” Grogan, Bell, and Conner (1997) found that perceived social pressure and attitudes toward sweet snacks could be used to predict their intentions to eat sweet snacks. Men, on the other hand, were not influenced by perceived social pressures. In a study of meal size, Mooney, DeTore, and Malloy (1994) discovered that women who eat low fat meals are perceived better by both men and women. In the same vein, Basow and Kobrynowicz (1993) found that women who eat larger meals are perceived differently than those who eat smaller meals. Interestingly, they also found that females are much more critical of female eaters, indicating that social pressure cannot be fully attributed to the meanings that men place on food consumption. Social opinion can impact both men and women. Mooney and Lorenz (1997) compared perceptions of both feminine and masculine meals. They generated these meals by asking participants to identify foods that they viewed as masculine or feminine. Mooney and Lorenz then created masculine and feminine meals for two fictional characters, one male and female. They subsequently found that the male

character who consumed the feminine meal was perceived better by both men and women.

Behaviour. In general, women, more so than men, are more likely to claim healthier eating patterns. Again, this may relate to their perceptions, as well as societal perceptions, concerning optimal food intake. Conner (1994) found that men intend to and actually do consume more snack foods than women. In terms of actual consumption, Johansson and Frost (1998) found that Norwegian women consume fruits and vegetables more often, though men have a higher absolute intake, which is to be expected as men generally tend to be bigger eaters than women. There is also evidence that men and women may choose different diets altogether. Povey, Wellens, and Conner (2001), in a study of chosen diets, found that more women chose vegetarian diets where they eliminate all meat from their diet, as well as meat-avoiding diets where they do not eliminate meat, but prefer to consume foods other than meat.

Not only are there differences in the types of foods preferred, men and women display differences in the types of foods they avoid. Mooney and Walbourn (2001) found that the two most common foods that men and women avoid are meat and vegetables, for both men and women. However, while men were more likely to avoid vegetables first and meat second, women were more likely to avoid meat first and vegetables second. This is particularly interesting, as women are more likely to claim that they prefer healthy alternatives, such as vegetables, to sweet or unhealthy foods.

While men and women both need to eat and may be equally motivated to seek pleasure from food, they meet these objectives in different ways. For instance, while cravings for foods high in fat and sugar may be similar for both men and women (Mintz,

1999; Buss, 1995; Abrams, 1987), the exact foods craved and hedonic experiences associated with their consumption differ. We may also consider risk taking. In many areas men are expected to be greater risk takers than women, as this served an evolutionary purpose (Buss, 1995). Therefore, in terms of food, the male motivation for trying exotic or risky foods may be different from women. In general, it has been demonstrated that people may try foods that they initially find unappealing or that taste bad due to the thrill they receive from scaring themselves (Rozin, 1995). These may be reflected in vastly different mental images relate to food consumption. Mental imagery is one way to document and tap into the many meanings of food.

2.3.1 The Many Pleasures of Food. Rappoport et al (1992) found substantial support that the meanings of food directly influence reasons people give for eating what they eat. Pleasure is one of these reasons. Rappoport et al (1993) found that women tend to group foods that brought them pleasure differently than men. Women tended to categorize foods into standard groups (e.g. fast foods, traditional meals, healthy meals, etc.), while men tended to group their foods so that a mixed variety was obtained (e.g. factor 3 in their study for men contained fast foods, traditional meals, and heavy desserts). This indicates that men and women may not only eat different foods, they conceptualize these foods differently.

Commonly documented objectives for the consumption of specific foods include pleasure, tradition, convenience, and health (Mooney and Lorenz, 1997; Rappoport et. al, 1992; Rappoport et. al, 1993). Pleasure has generally been categorized as sensory, most often synonymous with taste. It has been primarily viewed as mutually exclusive and one-dimensional. For instance, if the motivation for eating an apple is pleasure, the

possibility that the pleasure is both sensory and emotional is not relevant. This approach is consistent with the unitary perspective in pleasure research. In fact, Cabanac's (1971) concept of alliesthesia has been applied in food research when examining pleasure (e.g. Laeng, Berridge, and Butter, 1993). Despite this one-dimensional approach favoured in food research, there are strong indications that multiple pleasures exist and influence preference formation and consumption behaviour.

Research on food and hedonic consumption has recognized that both cognitive and sensory influences weigh heavily in selection related to pleasure-driven food choices (Ewing et al., 1999; Grunert, 1994; Hirschman and Holbrook, 1982). However, the pleasure associated with food has been rarely viewed as multi-dimensional, with the exception of Rappoport et. al (1993) who defined their criteria for pleasure as "all forms of sensory, social, emotional or aesthetic pleasure" (p. 37). These, combined with current research in the experiences of pleasure, indicate that it may be time to revisit pleasure in food consumption. The pleasure obtained from food may be more complex than previously thought. The framework of pleasure substantiated by Dubé and Le Bel (2003), in which social, emotional, intellectual, and sensory pleasures which were viewed as distinct by their participants, may provide useful insights into pleasure in food consumption. Indeed, each of these pleasures is already apparent in food consumption research.

Social pleasure can be defined as the pleasure obtained from the company of friends or family and the pleasures of making new acquaintances. Social contexts are often a key component of food consumption. *Emotional pleasure* involves activities pursued for their ability to induce certain moods or specific emotional responses (e.g.,

music, movies, etc.). Emotions have received considerable attention in food research, however, the attention generally focuses on negative emotions. Despite this, Macht (1999) found that eating for pleasure was more common when people experienced joy rather than negative emotions. *Intellectual pleasure* includes the pleasure of discovery and learning from activities that require cognitive effort (e.g. reading). Rappoport et al (1992) found that the focus in food research tended to be on what people eat, rather than how they think about their food. While this approach may not be strictly intellectual they raised some good points, such as the ability to look at food as “an expression of the mind as well as of the palate; a consequence of intentional thought and information processing.” *Sensory pleasure* includes activities and objects that are highly sensory and sometimes erotic.

It may be worthwhile to move beyond sensory pleasure and taste and consider the social, emotional, and intellectual components of food consumption. While distinct pleasures have not traditionally been examined in food research it is evident that there is need for an approach that accounts for the rich pleasurable experiences associated with food consumption. Investigation of mental images and the manipulation of mental imagery may provide the necessary link in investigating and understanding these relationships and how they differ for men and women.

CHAPTER 3

STUDY 1: FOOD-BOURNE PLEASURES AND RELATED MENTAL IMAGERY

The differentiated perspective whereby antecedents are important and lead to social, emotional, intellectual, and sensory pleasure has been supported by the findings of Dubé and Le Bel (2003). However, these findings have not been applied to specific product categories, such as food, and may provide valuable insight. There is evidence that food-borne pleasures do vary and are worthy of further consideration. One objective of study 1 was to determine whether the many pleasures of food consumption are multidimensional and can be reliably identified.

Closely linked to pleasure is mental imagery. Hirschman and Holbrook (1982) and MacInnis and Price (1987) both drew attention to the integral role of mental imagery in hedonic consumption, though relatively little has been done to pursue this connection. Finding that mental imagery does affect attitude towards the ad, but neither attitude towards the brand or behavioural intentions, Ellen and Bone (1992) extended beyond traditional approaches, identifying the need to consider the actual content of mental images. In study 1, the content of mental images associated with food consumption was investigated.

Mintz (2002) notes that women and men do not eat alike and do not appear as though they want to eat alike. He argues that certain values and preoccupations impact eating, which are closely linked to culture. The second objective of study 1 was to determine whether the types of pleasure and mental images associated with food consumption differ for men and women.

3.1 Design and Method

3.1.1 Sample. This study was conducted with a convenience sample of undergraduate students recruited from an advertising class in the fall of 2001 at a major eastern Canadian university. The sample consisted of 34 participants (23 females and 11 males) with an average age of 24. Participants received class credit for their participation.

3.1.2 Procedure. Participants were instructed to submit images that they associated with four different categories of pleasure, including social, emotional, intellectual, and sensory pleasure (Dubé and Le Bel, 2003). To ensure that each participant held similar meanings of these pleasures, a brief definition of each pleasure was provided. Participants were requested to submit between eight and twelve images, for each type of pleasure, which they felt represented their views of that pleasure. There were no restrictions on the nature of the images submitted, as long as the images helped to define each type of pleasure for the participant. They submitted the images in four consecutive weekly instalments. In addition to the images, participants were also asked to write a brief description of why they chose to submit each of the images, essentially relating the chosen image to their concept of pleasure. This methodology was inspired by Zaltman and Cloutier (1995).

The images pertaining to food were extracted from each type of pleasure for each participant. These images included any type of food advertisement, snack foods, convenience foods, meals, cooking, non-alcoholic beverages, and dining settings. In this case, alcoholic beverages were viewed as a distinct category, often consumed separately from food. For this reason, they were not included in the present study.

3.1.3 Analysis. The images were primarily analyzed through content analysis. Two trained coders working independently coded all of the images. Prior to coding, both coders underwent training to familiarize themselves with the coding scheme. The coding scheme was developed at two levels, one examining the image itself and the other examining the text written about the image. In the first level, the “image level,” four codes were designed. The second level, the “text-level,” consisted of five codes. The codes at both levels were designed to capture information related to social, emotional, intellectual, and sensory pleasure. The purpose of analyzing images at two levels was to understand what was viewed as pleasurable and why it was viewed as pleasurable. As this was one of the first studies investigating print food images, the categories for coding the images were borrowed from Dubé (1995). As Dubé’s study focused on television commercials of food, the categories were adapted and enriched to include the diversity of print advertisements used in study 1. Some of the main categories used for coding the images and text will be discussed.

Image-Level Codes. The category “*type of pleasure*” captured the pleasure with which respondents had classified their own food image (social, emotional, intellectual, or sensory). This information is important as it indicates how respondents related to the images which they submitted and which pleasure they associated with the image.

Table 3.1: “Type of Pleasure” Code

Code		
Type of Pleasure	(1) Social	(3) Intellectual
	(2) Emotional	(4) Physical

At the image level, codes included contents of image, social setting, food category, and sweets. Collectively these codes were designed to capture the content of

the actual images. “*Contents of image*” focused on the main feature or action of the image, ranging from no specific consumption situation (i.e., food was merely shown) to the actual social context of an actual consumption experience whereby food is being prepared or consumed. The purpose of this code was to provide a general idea of the image respondents selected and how food was included in the image.

Table 3.2: “Contents of Image” Code

Code		
Contents of Image	(1) Food Only	(4) Food-related setting (e.g. dinner table, no people)
	(2) Person Eating (e.g. alone or dining with others)	(5) Animal Eating
	(3) Person performing food-related activity (e.g. cooking)	(6) Other (e.g. logo or food but no consumption, such as a man and woman kissing, not eating, but ice cream is being advertised).

While “*contents of the image*” was designed to capture the relationship with food in the image, “*social setting*” captured the relationships of the people in the image. The items in this category were adapted from Dubé (1995), where she analyzed food advertisements on television. The purpose was to determine whether images selected depicted social situations involving food, and if so, what types of relationships were most often depicted. This varied from “*contents of image*,” where an overview of the image was obtained, in that it focuses specifically on the social relationships of the image.

Table 3.3: “Social Setting” Code

Code		
Social Setting	(1) Not applicable (no people or animal)	(4) With friends
	(2) Animal only	(5) Couple
	(3) Alone	(6) Family
		(7) Parents-children

“*Food category*,” also adapted from Dubé (1995), captured the food category into which the image could be classified. Through this category it was possible to determine which foods are most often associated with pleasure and the specific pleasure it produces. This code was taken one step further, as people have an innate tendency to prefer sweet foods (e.g. Mintz, 1999; Rozin, 1995). In addition to capturing the food depicted, the code “*sweets*” was designed to capture the actual type of dessert or sweets portrayed in the image. Therefore, if one of the foods happened to be sweet in nature, it was further coded. Hence, cheesecake may be categorized as a dessert in the “*food category*” and then as a cake or pastry in the “*sweet*” category. As it is already known that both women and men have a preference for these foods, it is useful to determine if either sex prefers certain sweet items and how they relate to these items.

Table 3.4: “Food Category” and “Sweets” Code

Code		
Food Category	(1) Not applicable (no food shown or many types, so can’t tell)	(6) Fast Foods
	(2) Snacks	(7) Milk, dairy products
	(3) Desserts	(8) Pre-prepared foods
	(4) Beverages	(9) Dietary supplements/Weight Loss
	(5) Cereals (including pastas and bread)	(10) Fruits and vegetables
		(11) Meats and meat substitutes
Sweets	(1) Not applicable (not a sweet food)	(5) Chocolate Bar
	(2) Fruit	(6) Ice cream
	(3) Cake or Pastry (excluding chocolate)	(7) Sweet Drink (Soft drink, fruit drink)
	(4) Chocolate Cake or Chocolate Dessert	(8) Other (e.g. gum, candy)

Text-Level Codes. As the participants also submitted text describing the pleasure they associated with their images, five additional codes were created for analyzing the

text of each image. These include food-related, social, emotional, intellectual, and sensory. “*Food-related*” was important for distinguishing the text that focused on food consumption. While all images analyzed were food-related, participants did not always discuss food in their text and instead focused on some other feature of the image that appealed to them, for instance a couple in the image. Only the text where food was discussed was analyzed.

The remaining categories were designed to summarize information related to the four types of pleasure (Table 3.5). While the participants identified the specific pleasures the images produced, their text often mentioned a variety of pleasures. Hence, the purpose of this category was to determine the nature of the pleasure as well as the way in which the pleasure was important to the respondent. The descriptions of each pleasure were adapted from Le Bel and Dubé (1998). The goal of “*social pleasure*,” pleasure received from a social situation, was to determine whether the participants themselves had identified social elements of the image, relating the image to their own social experience, whether by themselves or with others. The aim was to observe the social setting in which the participant envisioned themselves consuming the food. In terms of “*emotional pleasure*,” which included positive emotional responses, such as feelings of comfort, words that reflected the emotional relationship the participant had with the image were summarized. For instance, if the food made the respondent happy, “happy” was recorded. The purpose of this category was to determine the nature of the emotions associated with food consumption. “*Intellectual pleasure*,” intellectual stimulation and effort with matching consequences or rewards, captured the nature of intellectual benefits that the participant views himself or herself receiving from the image. Such benefits may

include goals, rewards, or spiritual or mental growth. “*Sensory pleasure*,” relation to physical attributes or sensations, summarized any physical sensations or benefits that participants related to the ad. The goal of this category was to identify the sensory benefits participants associated with their images. It is important to keep in mind that none of the categories are mutually exclusive. For instance, a participant could identify social, emotional, intellectual, and sensory aspects of their image as pleasurable in some way. This follows Dubé and Le Bel (2003) who emphasized the overlap that can occur between pleasures. Together these categories were developed to capture the diversity in pleasure participants related to their images.

Table 3.5: “Pleasure” Codes

Code		
Social (The setting in which they envision themselves consuming this food type; pleasure they receive from others.)	(1) No mention of social setting (2) Alone (3) With friends (4) Couple (5) Family/Tradition/Culture (6) Parents-children	(7) Combination (instances where more than one setting, such as family and friends) (8) Other (e.g. some participants discussed food and society)
Emotional (Positive emotional responses)	List emotional qualities associated with the image (e.g. enjoy, favourite, comfort)	
Intellectual (intellectual stimulation and effort with matching consequences or rewards)	(0) No intellectual benefits (1) Weight loss (2) Health goals	(3) Product of effort (e.g. cooking) (4) Other (please specify)
Sensory (Relationship to physical attributes or sensations)	(1) No sensorial attributes (2) Sight (3) Smell (4) Touch (5) Taste	(6) Sound (7) Hunger (8) Combination (9) Physical activity (exercise)

3.2 Results

The results will be discussed in three steps. First, an overview of the images will be provided, with a general breakdown of the images by gender and pleasure. Second, the images themselves will be discussed, including the situation, social setting, food category, and sweet items. Third, the text will be considered, including the social, emotional, intellectual, and physical pleasures participants related to the images they selected. Intercode reliability was 81.2%, with the agreement for each of the categories ranging from 54.4% to 100.0%. Disagreements were resolved through discussion.

The results do not include the Chi-squared statistic. The purpose of the coding was to extract and preserve the richness of the findings. As the purpose of study 1 was not to test predictions, but to document the pleasures and images associated with food consumption, collapsing the categories to allow calculation of the statistic would have lost the richness and meaningfulness of the findings. For both the image-level and text-level findings, the number of images falling into each code and their means are provided.

3.2.1 Image-Level Findings. By the number of images submitted and the range of pleasures experienced, it is evident that pleasure is an integral feature of food consumption. Approximately 340 images associated with pleasure were submitted by the 34 participants (23 females, 11 males). From these, 102 food images were extracted (75 originating from females and 27 from males). An average of 3 images was submitted by each participant, with women submitting a higher average number of food images than did men, 3.26 and 2.45 respectively. The importance of pleasure in food consumption is further evidenced by the fact that only 3 students out of 34 did not submit any food

images (1 woman and 2 men). All of the images submitted were from advertisements, most often taken from popular magazines.

Pleasures from Food. As is illustrated in Table 3.6, 41.12% of the images were submitted under sensory pleasure, with both women and men submitting the largest number of images in this category, 37.33% and 51.85% respectively. The remaining images submitted by women had a relatively even distribution, composed of social (25.33%), intellectual (20.00%), and emotional pleasure (17.33%). Interestingly, intellectual pleasure appears to be an important component for women, unlike men, who did not submit any images in the category of intellectual pleasure. Men, however, did associate a high percentage of their images with emotional pleasure (25.93%) and social pleasure (22.22%).

Table 3.6: Breakdown of Images by Pleasure

Pleasure	Female (=23) (75 Images)		Male (=11) (27 Images)	
	n	% ^a	n	% ^a
Social	19	25.33	6	22.22
Emotional	13	17.33	7	25.93
Intellectual	15	20.00	0	0.00
Sensory	28	37.33	14	51.85

^a within gender

Content. The results in this section were consistent for both females and males. The type of food and the actual consumption of food is the primary focus for most participants. The most common images submitted were of food only (36.27%), which is true for both men and women (see Table 3.7). The second most popular type of image contained food consumption (28.43%). Images categorized as “other” (17.65%), often depicted food and persons, though the two were unrelated (i.e. there was no food

consumption or activity taking place, but food was in the image). For instance, one participant submitted an advertisement for Häagen-Dazs Ice Cream, where a container of Häagen-Dazs was displayed with a couple kissing in the background (subj.23, im.2).

Table 3.7: Breakdown of Images by Content

Content	Female (=23) (75 Images)		Male (=11) (27 Images)	
	n	%^a	n	%^a
Food Only	25	33.33	12	44.44
Person Eating	22	29.33	7	25.93
Food-related Activity	7	9.33	1	3.70
Food-related setting	5	6.67	2	7.41
Animal Eating	2	2.67	1	3.70
Other	14	18.67	4	14.81

^a within gender

Social Setting. In a majority of the images it was impossible to identify the social setting, which was the case for both women (42.67%) and men (51.85%). Most likely, this can be attributed to the large number of images containing food only. However, as seen in Table 3.8, when an image contained a particular social setting, the focal character was most often alone (28.43%). Interestingly, while some images submitted by women contained displays of friendship (13.33%), men submitted no such images.

Table 3.8: Breakdown of Images by Social Setting

Social Setting	Female (=23) (75 Images)		Male (=11) (27 Images)	
	n	%^a	n	%^a
Not applicable	32	42.67	14	51.85
Animal Only	1	1.33	1	3.70
Alone	20	26.67	9	33.33
With Friends	10	13.33	0	0.00
Couple	5	6.67	2	7.41
Family	7	9.33	1	3.70

^a within gender

Food Category. Men and women appear to be attracted to different foods. It is clear that women and men have different types of food images with which they associate pleasure. For women, the highest number of images was in the desserts and beverages category, at 18.67% and 16.00% respectively. However, for men, more images were submitted in the category of milk products (25.93%) and cereals (14.81%). There was a relatively even distribution of the remaining images, for both women and men, as is illustrated in Table 3.9.

Table 3.9: Breakdown of Images by Food Category

Food Category	Female (=23) (75 Images)		Male (=11) (27 Images)	
	n	%^a	n	%^a
Not applicable	12	16.00	4	14.81
Snacks	6	8.00	3	11.11
Desserts	14	18.67	2	7.41
Beverages	12	16.00	1	3.70
Cereals	8	10.67	4	14.81
Restaurants	4	5.33	1	3.70
Fast Foods	2	2.67	1	3.70
Milk, Dairy Products	7	9.33	7	25.93
Pre-prepared food	4	5.33	0	0.00
Dietary Supplements and Weight Loss	2	2.67	2	7.41
Fruits and Vegetables	2	2.67	0	0.00
Meats and Meat Substitutes	2	2.67	2	7.41

^a within gender

Sweet Foods. The images submitted reflect the human fondness for sweet foods, as 37.25% of all images submitted were of sweet foods (Table 3.10). Sweet foods are greatly connected to pleasure, for both women and men. Surprisingly, none of these images were of fruits, foods high in natural sugar. Nonetheless, there are some

noticeable differences between the sweet preferences of men and women. Women, unlike men, had a relatively even distribution of sweet items. Men did not submit any images of cake or chocolate bars, though for women 8.00% of the items were of cake, and 9.33% of the items were chocolate bars. However, of all of the sweet images, 14.81% of men's were of ice cream while women submitted images with only 5.33% containing ice cream. This contrasts with the popular television stereotype that woman have a higher emotional connection to ice cream. One participant submitted the same image of ice cream twice as he distinguished it as leading to both emotional and sensory pleasure (subj.7, im.5, im.10).

Table 3.10: Breakdown of Images by Sweet Foods

Sweets	Female (=23) (75 Images)		Male (=11) (27 Images)	
	n	%^a	n	%^a
Not Applicable	46	61.33	18	66.67
Fruit	0	0.00	0	0.00
Cake or Pastry	6	8.00	0	0.00
Chocolate Cake/Dessert	3	4.00	2	7.41
Chocolate Bar/Cookies	7	9.33	0	0.00
Ice Cream	4	5.33	4	14.81
Sweet Drink	7	9.33	2	7.41
Other (e.g. candy, gum)	2	2.67	1	3.70

^a within gender

3.2.2 Text-Level Findings. Although many food images were submitted, there were cases where respondents did not discuss the pleasure they received from food. This was often because there was something else in the image that captured their attention, such as sleeping or sports. This may have occurred due to the layout of the image. In these images, food was not the focal point. As reflected in Table 3.11, women discussed

food in 61 of the 75 images submitted and men discussed food in 23 of the 27 images.

The following results are based on the images where food consumption was discussed.

Table 3.11: Breakdown of Text by Relation to Food Consumption

Food Consumption	Female (=23) (61 Images)		Male (=11) (23 Images)	
	n	% ^a	n	% ^a
Yes	61	81.33	23	85.19
No	14	18.67	4	14.81

^a within gender

Social Pleasure. “...Social pleasure for me is derived from spending quality time with my friends while eating at a fine restaurant” (subj.4, im.1). Social pleasure is a very important aspect of food consumption (Table 3.12). Women mentioned the social pleasure connected to their images 47.54% of the time and men mentioned social pleasure 39.13% of the time. This suggests a high association between food and social setting. This should be expected as each time food is consumed there is some degree of social setting, whether the person is alone or with others.

Table 3.12: Breakdown of Text by Social Pleasure

Social Pleasure	Female (=23) (61 Images)		Male (=11) (23 Images)	
	n	% ^a	n	% ^a
None	32	52.46	14	60.87
Alone	5	8.20	1	4.35
With Friends	9	14.75	4	17.39
Couple	1	1.64	2	8.70
Family/Tradition/Culture	6	9.84	1	4.35
Parents/Children	1	1.64	0	0.00
Combination	7	11.48	1	4.35

^a within gender

Social setting is often an influencer of the type and amount of food consumed (Mooney and Lorenz, 1997; Rappoport et al., 1993). One female participant highlighted the special nature of shared food consumption. She described an image of a couple dining: “when you watch people eat, and you let them watch you eat, you feel closer to each other, being involved in the same activity. Restaurant is not only about eating, it’s the whole social interaction that makes the experience so enjoyable” (subj.18, im.3). The most frequent social setting discussed included friends for both women (14.75%) and men (17.39%). The remaining images were evenly distributed among the remaining social categories.

Emotional Pleasure. A range of emotions were attached to food consumption. Participants often described how consumption made them feel about themselves; how emotional pleasure was not merely superficial. For instance, a number of female participants described the benefits of certain foods, often sweet: “as soon as (I) see food whether it’s an image or the actual thing, it makes me feel good...It makes me feel safe, it makes me feel better when I’m feeling down” (subj.6, im.3).

Food was also recognized as serving an important role in creating a specific mood for romance. Interestingly, a male participant expressed how the providing emotional pleasure for someone else made him feel good, and brought him clear benefits. He noted that “sometimes a well-prepared romantic dinner can lead to an all together different type of pleasure” (subj.12, im.2).

Intellectual Pleasure. “Now when I cook I feel like I have created a great masterpiece and am almost sad to see my art destroyed when it is eaten” (subj.23, im.1). The expression “food for thought” appears to ring true as a considerable level of

intellectual pleasure associated with food consumption. Intellectual pleasures of food were mentioned 29.57% of the time, indicating that a relatively high portion of food consumption is not how one feels about their food, but how they think about *their food*.

As is seen in Table 3.13, there was a large variation between women and men, as women considered the intellectual pleasure associated with food consumption in almost 35% of the images, while men considered it in only 13.05% of the images. Those men that did consider intellectual pleasure in food consumption did so in terms of health goals and as a product of effort. One male participant related pleasure to an ad for Special K cereal, as he felt that without Special K he would “not be able to function properly and accomplish my goals throughout the day” (subj.6, im.3). It is interesting to note that while men did not classify any of their images in intellectual pleasure (table 4.1), they did describe some intellectual benefits, though at a very low level. This demonstrates that a pleasure may have numerous dimensions. While one pleasure may be the focus of an experience, it does not exclude the other pleasures.

Table 3.13: Breakdown of Text by Intellectual Pleasure

Intellectual Pleasure	Female (=23) (61 Images)		Male (=11) (23 Images)	
	n	% ^a	n	% ^a
None	40	65.57	20	86.96
Weight Loss	3	4.92	0	0.00
Health Goals	3	4.92	1	4.35
Product of Effort	7	11.48	2	8.70
Other	8*	13.11	0	0.00

^a within gender, *Other intellectual pleasure mentioned included peace of mind, discussion of lives, common interests, learning, new experiences, and rewards.

For women, the range of intellectual pleasures was broader. While product of effort was very important to them, they also receive other benefits, including peace of

mind, discussions of lives and common interests, learning and new experiences, and rewards. The results reflect the potential impacts of intellectual pleasure, which appear to be directly connected to how individuals see themselves. For instance, one female participant, when describing her experience in a cooking class, wrote “the learning of culinary skills made me feel more independent, and more rounded as a person.” (subj.23, im.3).

It is important also to note that pleasure and health have been previously depicted as mutually exclusive and as opposites. However, some participants view health as highly intellectual. While they consumed certain foods for their body they received intellectual rewards, such as the knowledge that they had made smart choices or worked hard to follow a diet.

Sensory Pleasure. “Physical pleasure is not only about consuming food, it is about the anticipation of eating *good* food” (subj.23, im.3). The sensory experience is still the most well-defined of all of the pleasures. Sensory pleasures were the most frequently experienced pleasures related to food images for both men and women. From Table 3.14 it is evident that both women and men identified a combination of sensory pleasures in the images they submitted, attaching a variety of sensory experiences to food. The text of an image was considered combination if it included more than one of the sensory pleasures, such as taste and sight. This was not uncommon, and was expressed by one female participant who wrote that an image of a tomato “involves our five senses: sight, smell, touch, taste, and even hearing” (subj.30, im.1).

Table 3.14: Breakdown of Text by Sensory Pleasure

Sensory Pleasure	Female (=23) (61 Images)		Male (=11) (23 Images)	
	n	%^a	n	%^a
None	14	22.95	6	26.09
Sight	9	14.75	1	4.35
Smell	1	1.64	0	0.00
Touch	1	1.64	0	0.00
Taste	12	19.67	3	13.04
Sound	2	3.28	1	4.35
Combination	15	24.59	11	47.83
Exercise	7	11.48	1	4.35

^a within gender

Beyond combination, women identified the importance of taste in 19.67% of the images and men in 13.04% of the images. Interestingly, women often recognized the way that taste could conflict with health. One woman wrote in favour of the taste of chocolate cake, expressing that she doesn't "feel guilty after a dessert like that because the taste alone is worth whatever the physical sacrifice" (subj.16, im.2).

Women, however, found a number of pleasures important, including sight (14.75%) and exercise (11.48%). Exercise was often viewed as highly sensory as females often related their food choices to exercise. This is an important finding, as men appear to be more one-dimensional in the sensorial pleasures they obtain from food consumption. Women, on the other hand, have many sensory dimensions that shape their pleasurable food experiences. Some of these may occur prior to tasting. As one female participant expressed, sensory pleasure "is not only about consuming food, it is about the anticipation of eating food" (subj.1, im.5).

3.3 Discussion

Women and men agree they like food, though they do not always agree on why they like food. The results of this study reflect the similarities and variations that women and men have in their conceptualizations of food-borne pleasures. It is evident that the way that pleasure in food consumption is viewed needs to be reconsidered.

The pleasure associated with food consumption is not merely a matter of taste, as is most often assumed. A number of the research propositions discussed in the conceptual framework have been substantiated. Following from this study, it is clear that the pleasure associated with food is multidimensional. Food plays a critical role, not only for survival, but for emotional, social, intellectual, and sensory purposes, as participants selected images for each of these categories. Interestingly, the mere thought of food, void of actual consumption, brings substantial pleasure, as is evident through the rich descriptions participants attached to their chosen images. It is also apparent that mental imagery served an invaluable purpose in eliciting the pleasure associated with food consumption as participants selected images reflecting each of the four pleasure types.

An additional consideration was the impact of sex on pleasure and associated mental images. With the exception of intellectual pleasure, women and men tended to agree on what was pleasurable, with a similar proportion of images in each category and a similar level of focus on each pleasure. Participants discussed multiple pleasures in their images, regardless of their classification of the images. However, men and women, while sharing some similar images, did vary on a few levels. For instance, women tended to have a more even distribution of mental images associated with pleasure. Men on the other hand, failed to associate the pleasure they obtained from food to intellectual

pleasure. Men, however, did submit a higher average of images that they related to emotional pleasure. This is somewhat surprising as women are often recognized as having a higher emotional relationship with food (Macht, 1999). An additional consideration is the relatively high number of images associated with sensory pleasure. For men and women, sensory pleasure was the most frequently mentioned. However, as noted by Damasio (1999), sensory pleasure is thought to be one of the most fundamental pleasures.

Though this study was not designed to analyze print food images, this was the result as all submitted images were commercial images. This allows us to expand our view of research in food advertising, such as that of Dubé (1995) where television ads have been the focus. In addition, study 1 has made important contributions to our understanding of the way that the pleasure associated with food consumption is conceptualized, however, there three issues that must be considered. First, while it is apparent that women and men associate different images and pleasures with food, they had the freedom to select the images that best suited their definition of pleasure. Naturally, this leads to the question of what would occur if each gender was faced with the same choices and opportunities to engage in mental imagery. A second consideration arises from the way in which Study 1 used mental imagery to investigate pleasures. Clearly a wide range of images is associated with pleasurable food consumption. Unfortunately, there is no indication of how this pleasure is affected by mental imagery, as it is impossible to tell whether participants experienced high or low levels of mental imagery when selecting their images. Researchers of hedonic consumption propose that mental imagery can have a significant impact on choice, with the presence of mental

imagery often leading to select the hedonic option (Dhar and Wertenbroch, 2000; Shiv and Huber, 2000). Therefore, if women and men are faced with multiple choices, some of which may be more hedonic than others, how does the presence of mental imagery influence selection? Both of these issues will be considered in Study 2. A third issue is the difficulty in relating the images of pleasure submitted by participants in study 1 with mental imagery. This raises the possibility that participants experienced certain pleasures and then had difficulties in articulating these images by finding accurate images to fit these pleasures. This speaks to the complexity in studying mental imagery. Images occur at the time that pleasure is experienced, however, the internal nature of mental imagery makes it inherently difficult to capture these images.

Study 1 has provided useful information for study 2. First, it is evident that multiple pleasures are related to food. Two of these pleasures will be pursued in study 2. Second, we have greater insight into the types of mental images associated with pleasurable food consumption experiences which aids in the development of specific advertisements. Third, while men and women are similar on some levels, differences do exist that need to be explored. In study 2 the pleasure and mental imagery associated with food consumption is approached from a different angle. While study 1 was largely uncontrolled as participants had the freedom to choose the images and pleasures they desired, the level of mental imagery and pleasures to which respondents are exposed are controlled in study 2.

CHAPTER 4
STUDY 2: THE IMPACT OF MENTAL IMAGERY AND PLEASURE ON THE LIKING FOR
FAMILIAR AND NOVEL FOODS

The findings of study 1 suggest that pleasure is multi-dimensional. In study 1, the images associated with pleasure were investigated. In study 2, it is the impact of imagery on the liking for food products which is of main interest. As the ability to imagine leads to greater anticipated pleasure, individuals are more likely to choose products that they can easily imagine and often these are products with more vivid attributes (Shiv and Huber, 2000). McGill and Anand (1989) suggested that vivid material presented via pictures may encourage elaboration even when instructions to imagine are not present, though they also proposed that cognitive elaboration (the opportunity to elaborate on material presented) is a critical factor in allowing vividness to have an impact on the attributes of an item.

An additional consideration in study 2 has arisen due to the high stakes involved in advertising new food products to the market. This risk is inherently higher with unfamiliar products (i.e. products that go beyond minor variations on an existing product). An advertiser must convince a consumer to be willing to try a new product in an extremely short period of time. Unfortunately relatively little is known about consumer experiences with novel food items. This can be partially attributed to food research which most often utilizes familiar food lists. These lists, whether created by the researcher or by the respondents contain only foods with which respondents are familiar, such as ice cream and apples (e.g. Rappoport et al, 1993, 1992).

There are indications that liking new foods is complicated and heavily influenced by cognitive constructs. As found by Tuorila, Meiselman, Bell, Cardello, and Johnson (1994), the type of information to which an individual is exposed can have a significant impact on their openness to new and unfamiliar foods. Tuorila et al. focused on the response to novel and familiar foods. They provided various levels of sensory (appearance, smell, and taste) and verbal information to participants on novel and familiar foods. They discovered that when individuals had an increase in sensory information, they experienced a decrease in liking for novel foods, but an increase in liking of familiar foods. They also found that verbal information increased liking for both novel and familiar foods.

The objective of study 2 was to determine whether attitude toward the ad, attitude toward the product, and purchase intention are affected by type of imagery, novelty of the product, and sex. One prediction has arisen from the findings of study 1 where men submitted a high concentration of ads in sensory pleasure while women had a much more even distribution of pleasures. Prediction 1 is that women are more open to emotional appeals while men are more open to sensory appeals. A second prediction relies on the findings that men and women do approach novel foods differently (Bäckström, Pirttilä-Backman, and Tuorila, 2003). There are also fundamental differences between men and women, with evolutionary psychologists indicating that men are greater risk takers than women. Prediction 2 is that men are more open to novel products than women.

4.1 Experimental Design

A 2 x 2 x 3 experimental design was used, where novelty of the product (familiar vs. novel) was treated as a within-subject factor and sex (male vs. female) and imagery (emotional vs. sensory vs. control) were treated as between-subject factors. While study 1 reflected the multidimensional nature of pleasure, with social, emotional, intellectual, and sensory pleasures experienced, study 2 focused exclusively on emotional and sensory pleasures. Not only was this deemed to be less taxing to participants (they were exposed to two instead of four types of pleasure), it has been suggested that social and sensory pleasures share similar evolutionary roots while intellectual and emotional pleasures belong to a higher order of pleasures with more complex processes (Damasio, 1999).

In this study imagery and pleasure are linked. In the control condition neither mental imagery nor pleasure were manipulated. The participants in the control condition received very basic, written information regarding their alternatives. In the emotional and sensory conditions, however, both mental imagery and pleasure were manipulated by providing both verbal and pictorial descriptions of the products. Through images mental imagery became more vivid and type of pleasure (emotional or sensory) was established.

Mental imagery was also manipulated via instructions. In the control group participants were directed to avoid engaging in mental imagery before reading the task. These instructions were adapted from Anand-Keller and McGill (1994). The following instructions were presented to participants: “We do request that you be careful and well-reasoned when responding to the question that follows. Please don’t let your imagination get the better of you. Rather try to make a logical assessment of the food items.” In the sensory and emotional conditions, participants were given the following instructions:

“When examining the ads, please consider how the products relate to you. **Imagine** yourself in a situation where you are consuming the product in the ad—allow yourself to **imagine how this experience may feel**. What is happening? Who is there with you perhaps? How does it feel? What is going through your mind? Etc.”

The purpose of using two methods for manipulating mental imagery originated from the findings of McGill and Anand (1989), which indicated that while vivid information is an important aspect of mental imagery, it is also necessary to provide consumers with the opportunity to imagine.

4.2 Methodology

4.2.1 Participants. The sample consisted of 158 participants (81 males, 77 females) recruited from the campus of a large eastern Canadian University. The age ranged from 19 to 53 years with an average age of 25.8 (25.3 for females, 26.3 for males). There appeared to be no differences between the older and younger participants, therefore all were included in the study. Data were collected over four days during the summer of 2002. Participants were recruited in one of the main buildings on the campus and were given \$5.00 upon completion of the questionnaire. Of the 158 surveys completed, 157 were deemed usable. One survey completed by a male participant was discarded due to largely illegible and incomplete answers.

4.2.2 Experimental Stimuli.

Samples. Two different sets of products were used in the questionnaire. Four types of products in total were used as stimuli; two types of yoghurt and two types of chocolate. Each pair was comprised of one familiar and one novel product (following

from Tuorila et al, 1994). The familiar yoghurt was homestyle yoghurt (regular yoghurt) and the unfamiliar or novel yoghurt was soy yoghurt. The familiar chocolate was a milk chocolate and the novel chocolate was a peppercorn chocolate (rich chocolate laced with pink peppercorns). Each of the products was pretested to ensure sufficient familiarity and novelty.

The novel products were originally selected as they contained distinct properties and substantial unfamiliarity, yet were similar enough to the familiar products so that participants could develop some impression of the products even if they had never been in contact with them before (Tuorila et. al, 1994). This method of the researcher selecting products due to their differences has also been previously used in food research (e.g. Matilla, 2000, Tuorila et al., 1994). The second reason for selecting these products lies in their sweetness. The preference for sweet foods has been displayed in previous literature, as well as in study 1, where both men and women repeatedly selected images of sweet foods that brought them pleasure. By focusing on sweet foods, there is a higher possibility that the choices are appealing to participants at some level. It also decreases the possibility that the unfamiliar food would be immediately rejected without any consideration.

Procedure. A portfolio test was designed, whereby participants saw advertisements for both of the yoghurts and the chocolates as well as two dummy wine ads which were not part of the actual study. Participants were asked to imagine that they were the ones selecting the items, as Ellen and Bone (1992) found evidence that the ability to imagine oneself as the focal character can influence selection. After reading the

scenario, participants were asked to evaluate each product. After evaluating both products, they were asked to select the product they preferred.

Six different tests were created (three for each set of products). Hence, tests were developed for both of the yoghurts and the chocolates for the emotional, sensory, and controlled imagery. Each respondent viewed one test involving yoghurt and one test involving chocolate (they each viewed two of the possible six scenarios). The participants in the control condition each received the same sets of tests, one of yoghurt and one of chocolate, with no manipulation of mental imagery or pleasure. However, the tests in the emotional and sensory conditions were alternated. For instance, if the test involving yoghurt focused on emotional pleasure then the test involving chocolate focused on sensory pleasure. Similarly, if the test for yoghurt focused on sensory pleasure, the test involving chocolate focused on emotional pleasure. This allowed similar ads to be used for emotional pleasure for both yoghurt and chocolate. While the ads in the control condition were text-only describing the products, the ads for both the sensory and the emotional conditions used images. These images were pretested to ensure sufficient sensory or emotional pleasure was associated with each of the images.

4.2.3 Questionnaire. The questionnaire consisted of three sections (refer to Appendix A). In Section A participants were asked to disclose demographic information, such as age and gender. This section also included the novelty-seeking scale, sensation-seeking scale, and the measures of familiarity and pleasure with certain food products. Section B and C alternated. Both sections were identical with exception of the products, either yoghurts or chocolates. In these sections participants were asked to read the scenarios and evaluate their impressions of each of the products by filling in a series of

questions. In the sensory and emotional conditions participants were exposed to advertisements designed for the study which included both text and pictorial information (see Appendix B).

4.2.4 Measures. The first section (Section A) of the questionnaire consisted of questions designed to gain insight into the demographic makeup of the participants. Demographic measures included gender, age, and cultural/ethnic background. Participants were also asked if they were lactose intolerant and if they considered themselves to be meat eaters or vegetarians. This information was captured as one of the products in each set contained dairy. In addition, participants were asked a series of questions related to neophobia. The neophobia scale (Pliner and Hobden, 1992) was applied to measure the participant's aversion to new and unfamiliar foods. They were also asked about their knowledge and familiarity with certain foods (7-point Likert scale anchored by "very unfamiliar" and "very familiar") as well as the pleasure they associate with certain foods (7-point Likert scale anchored by "no pleasure at all" and "very intense pleasure"). The purpose of these two questions was to gain an idea of what biases the participants brought with them. Participants also filled in a sensation seeking scale used to determine their level of preference for greater sensation. The short sensation seeking scale administered was adapted by Madsen, Das, Bogen and Grossman (1987) was adapted from Zukerman (1979). Participants were asked to fill in their level of hunger at the moment (7-point Likert scale anchored by "not hungry at all" and "extremely hungry"). This question was asked at the beginning and at the end of the questionnaire to determine if any changes had occurred.

Dependent Variables. Dependent measures included: (1) attitude towards the ad, (2) attitude towards the product, and (3) intention to purchase. Recognizing that the product and the ad are not equal, participants were asked to rate their attitude towards the ad (A_{ad}) using a 7-point Likert scale anchored by “did not like at all” and “like it very much”. Ellen and Bone (1992) found that an increase in vividness, quantity, and ease of imagery should lead to greater liking for the ad, even if it doesn’t increase behavioural intentions. Participants were also asked to rate their attitude towards the product (7-point Likert scale anchored by “I would not like it at all” and “I would like it a lot”) as well as their intention to purchase the product (7-point Likert scale anchored by “I definitely would not buy it” and “I definitely would buy it”).

Imagery Manipulation Check. It was important to ensure that the desired pleasure had been evoked by the advertisements. Though the pictorial ads focused on one pleasure, either emotional or sensory, participants were asked to rate whether the ad appealed to them and made them relate to the product on a sensory level (7-point Likert scale anchored by “not at all” and “very much so”) as well as whether the ad got them to think and relate to the product on an emotional/intellectual level (7-point Likert scale anchored by “not at all” and “very much so”). Participants in the control condition were also asked the same questions to allow for comparison between the various conditions.

4.3 Results

Results have been broken down into four sections: descriptive results and manipulation check are presented first. As each product (yoghurt and chocolate) were analyzed separately they are also presented separately.

4.3.1 Descriptive Information. A one-way ANOVA revealed no significant differences in age between males and females ($\text{Mean}_{\text{Males}} = 26.19$, $\text{Mean}_{\text{Females}} = 25.34$, $F(1,156) = .417$, $p > .05$). A wide variety of cultural/ethnic backgrounds were reported by participants. Participants identified their own ethnic or cultural background in an open-ended question. These results are summarized in Table 4.1.

Table 4.1 Mean Ethnic/Cultural Background by Gender

Ethnic Background	Male (=80)		Ethnic Background	Female (=77)	
	n	%		n	%
Arab	16	20.00	Arab	3	3.90
Black	3	3.75	Black	1	1.30
Canadian	11	13.75	Canadian	8	10.40
Chinese	10	12.50	Chinese or Asian	21	27.27
European	17	21.25	European	16	20.78
Hispanic	7	8.75	Hispanic	4	5.19
Indian/Pakistani	10	12.50	Indian/Pakistani	5	6.49
Russian	2	2.50	Russian	1	1.30
Mixed Response*	4	5.00	Mixed Response*	7	9.79
			Haitian	5	6.49
			Jewish	2	2.60
			West Indian	2	2.60
			Other	1	1.30
			Australian	1	1.30

*Indicates that participants identified themselves as belonging to more than one ethnic group (e.g. Brazilian/Lithuanian)

Table 4.2 refers to two questions concerning the dietary preferences of the participants. For the first question, chosen diet, 66 males identified themselves as eating meat and 15 as vegetarians. Of females, 57 were meat-eaters and 20 were vegetarians. Participants who consumed dairy (73 males, 72 females) were more numerous than those that did not (8 males, 5 females).

Table 4.2 Mean Diet and Lactose Intolerance by Gender

Type of Diet	Male (=80)		Female (=77)	
	n	%	n	%
Meat Eater	65	81.25	57	74.73
Vegetarian	15 *	18.75	20	25.97

Tolerance for Lactose				
Lactose Intolerant	8	10.00	5	6.49
Not Lactose Intolerant	73	91.25	72	93.58

*Includes one participant who identified himself as strict vegetarian

Additional descriptive statistics concerned the familiarity and pleasure participants associated with various food products. Table 4.3 presents the results of the familiarity participants had with a variety of products. A one-way ANOVA revealed significant differences in the familiarity with chocolate ($F(1,153) = 5.23, p < .05$). Females reported higher familiarity with chocolate ($\text{Mean}_{\text{Females}} = 5.84$) than did males ($\text{Mean}_{\text{Males}} = 5.27$).

Table 4.3 Mean Familiarity with Various Products by Gender

Products	Males	Females	F	Sig.
Cereal	5.85	5.73	.27	.60
Wine	4.16	3.61	2.63	.11
Cheese	4.99	4.75	.75	.39
Ice Cream	5.25	5.51	1.04	.31
Cookies	5.18	5.26	.10	.76
Soy	3.73	3.66	.05	.82
Chips	5.24	5.23	.00	.98
Chocolate	5.27	5.84	5.23	.02 *
Yoghurt	5.16	5.39	.69	.41
Coffee	4.56	4.37	.29	.59

* $p < .05$

However, no significant differences were revealed for the level of pleasure associated with the same group of products (Table 4.4). This is interesting, particularly for

chocolate. While men and women differ in their familiarity of chocolate, a one-way ANOVA revealed that the pleasure they receive from chocolate does not differ significantly ($F(1,154) = 7.28, p > .10$).

Table 4.4 Mean Pleasure Associated with Various Products by Gender

Products	Males	Females	F	Sig.*
Ice Cream	5.51	5.61	.18	.67
Yoghurt	4.73	4.81	.06	.81
Coffee	3.79	3.91	.11	.74
Chips	4.44	4.45	.00	.97
Cereal	4.39	4.22	.42	.52
Cookies	4.76	5.01	.95	.33
Wine	4.36	4.05	.76	.38
Chocolate	5.38	5.82	2.50	.12
Cheese	5.32	5.19	.21	.64
Soy	3.67	3.47	.40	.53

* $p > .10$

A one-way ANOVA revealed significant differences in sensation seeking ($F(1, 153) = 5.52, p < .05$), with males ($\text{Mean}_{\text{Males}} = 5.88$) reporting higher levels of sensation seeking than females ($\text{Mean}_{\text{Females}} = 5.12$). No significant differences in neophobia scale or in hunger were found (refer to Table 4.5.).

Table 4.5 Mean Neophobia, Sensation Seeking, and Hunger by Gender

	Males	Females	F	Sig.
Neophobia	4.09	4.11	.03	.87
Sensation Seeking Scale	5.88	5.12	5.52	.02 *
Hunger	3.69	3.26	2.04	.16

* $p < .05$

4.3.2 Imagery Manipulation Check. Since prior research did not point to clear ways to assess *type* of mental imagery, two questions were put to respondents to

determine the success of the experimental manipulation. To assess whether sensory imagery was triggered, participants were asked to indicate to what extent “this ad appeals to my senses and get me to relate to the product on a sensory level?” (7-point Likert scale, 1 = not at all, 7 = very much so). Secondly, participants were asked to indicate the extent to which “this ad gets me to think and relate to the product on an emotional level?” (scale same as above). Sensory ads should score higher on the first measure whereas emotional ads should score higher on the second. This was tested for each product separately. A 2 (familiarity) x 3 (imagery) ANOVA with paired contrasts was conducted where familiarity was treated as a within-subject factor. For both products, results confirmed a significant main effect of imagery on both variables.

For yoghurt, participants in the sensory condition judged the ads as appealing to their senses more so than participants in the emotional condition ($F(2,307) = 23.50$, $p < .05$). Participants in the emotional condition related to the product on an emotional level more than participants in the sensory condition ($F(2,307) = 28.24$, $p < .05$). While the contrast between emotional and sensory conditions were of primary interest, it is important to note that for the emotional manipulation check there were no significant differences between the emotional and control conditions. The same pattern held for chocolate: participants in the sensory condition judged the ads as appealing to their senses more so than participants in the emotional condition ($F(2,307) = 48.17$, $p < .05$). Participants in the emotional condition related to the product on an emotional level more than participants in the sensory condition ($F(2,307) = 146.27$, $p < .01$). Again, no significant differences were found between the emotional and control conditions for the emotional manipulation check. Table 4.6 below shows the cell means for each product.

Table 4.6 Imagery Manipulation Check Results

	Imagery Condition				
	Sensory	Emotional	Control	F-Value	Sig.
This ad appeals to my senses and makes me relate to the product on a sensory level					
Yoghurt	4.72	2.89	3.91	23.50	.04
Chocolate	4.56	2.77	3.96	48.17	.02
This ad gets me to think and makes me relate to the product on an emotional level					
Yoghurt	2.91	3.91	3.95	28.22	.03
Chocolate	2.62	3.80	3.91	146.27	.01

4.3.3 Results for Yoghurt. A multivariate repeated measures analysis was conducted with novelty of product (familiar vs. novel) as a within-subjects factor and sex (male vs. female) and type of imagery (sensory vs. emotional vs. control) as between-subjects factors. The results are presented in Table 4.7. Results show a significant main effect of within-subject novelty of the product [Wilks' Lambda = .912, $F(3,148) = 4.54$, $p < .01$], reflecting that the novelty of the product affected each of the dependent measures.

Table 4.7 Wilks' Lambda, Yoghurt

	Wilks' Lambda	F-Value	Sig.
Within Subjects			
Novel	.91	4.54	.00 *
Novel*Image	.98	4.91	.82
Novel*Sex	.99	.62	.60
Novel*Image*Sex	.94	1.54	.17
Between Subjects			
Image	.74	8.18	.00 *
Sex	.99	.42	.74
Image*Sex	.95	1.29	.26

* $p < .05$

The results in Table 4.7 also reveal a significant main effect of between-subject imagery [Wilks' Lambda = .736, $F(6,296) = 8.18$, $p < .01$]. This indicates that the nature of the imagery depicted also had an effect on the dependent measures. We will now consider the results for each of the three measures: attitude towards the ad, attitude towards the product, and purchase intention.

Attitude Towards the Ad (A_{ad}). Table 4.8 presents the results for within-subject, between-subject, and means for A_{ad} for both yoghurts.

Table 4.8 Attitude Toward the Ad, Yoghurt

Tests of Within-Subjects Contrasts		
Source	F	Sig.
Novel	2.96	.09
Novel*Imagery	.30	.74
Novel*Sex	.22	.64
Novel*Imagery*Sex	.57	.57

Tests of Between-Subjects Effects		
Source	F	Sig.
Image	20.70	.00 *
Sex	.88	.35
Image*Sex	.95	.39

* $p < .05$

Means			
Familiar Product (Home-style Yoghurt)	Males	Females	Total
Emotional	3.46	2.88	3.19
Sensory	5.00	4.70	4.85
Control	4.40	4.44	4.42
Total	4.27	4.03	4.15
Novel Product (Soy Yoghurt)	Males	Females	Total
Emotional	3.07	2.92	3.00
Sensory	4.96	4.33	4.64
Control	3.76	4.16	3.96
Total	3.91	3.82	3.87

Novelty of the product, a within-subjects factor, did not have a significant effect on A_{ad} though it was very close ($F(1,150) = 6.12, p < .10$). A significant main effect of between-subject imagery on A_{ad} ($F(2,150) = 20.70, p < .05$) was also found, indicating that the type of imagery to which participants were exposed affected their liking of the ad. Cell means illustrate that for the familiar home-style yoghurt sensory ads ($M_{sensory}=4.85$) were liked more than emotional ads ($M_{emotional}=3.19$) and control ads ($M_{control}=4.42$). Interestingly, the control ad, where no imagery was used, was preferred over the emotional ad. Soy yoghurt, the novel product, had the similar results, with sensory ad liked more than control and emotional ads ($M_{sensory}=4.64, M_{control}=3.9, M_{emotional}=3.00$).

Attitude Toward the Product. The results for within-subject, between-subject, and means for attitude toward the product are presented in Table 4.9. There was a significant main effect of within-subject novelty of the product on attitude toward the product ($F(1,150) = 10.56, p < .05$). Novelty of the product does affect how much the product is liked. The familiar product, home-style yoghurt ($M_{familiar}=4.62$), was on average preferred more than the novel product, soy yoghurt ($M_{novel}=4.10$). Between-subjects type of imagery does influence attitude toward the product. Results reflect a significant main effect of imagery ($F(2,150) = 19.92, p < .05$). Referring to the same table, it is evident that for home-style yoghurt, control received the highest rating ($M_{control}=5.20$) followed by sensory ($M_{sensory}=5.06$) and emotional ($M_{emotional}=3.64$). These results were not mirrored by soy yoghurt where sensory ($M_{sensory}=4.83$) was higher than both control ($M_{control}=4.36$) and emotional ($M_{emotional}=3.11$).

Table 4.9 Attitude Toward the Product, Yoghurt

Tests of Within-Subjects Contrasts			
Source	F	Sig.	
Novel	10.56	.00 *	
Novel*Imagery	1.16	.32	
Novel*Sex	.61	.44	
Novel*Imagery*Sex	.34	.71	
*p<.05			
Tests of Between-Subjects Effects			
Source	F	Sig.	
Image	19.92	.00 *	
Sex	.05	.83	
Image*Sex	2.59	.08	
*p<.05			
Means			
Familiar Product (Home-style Yoghurt)			
	Males	Females	Total
Emotional	3.71	3.56	3.64
Sensory	5.35	4.78	5.06
Control	4.72	5.68	5.20
Total	4.57	4.68	4.62
Novel Product (Soy Yoghurt)			
	Males	Females	Total
Emotional	3.21	3.00	3.11
Sensory	5.15	4.52	4.83
Control	4.20	4.52	4.36
Total	4.16	4.03	4.10

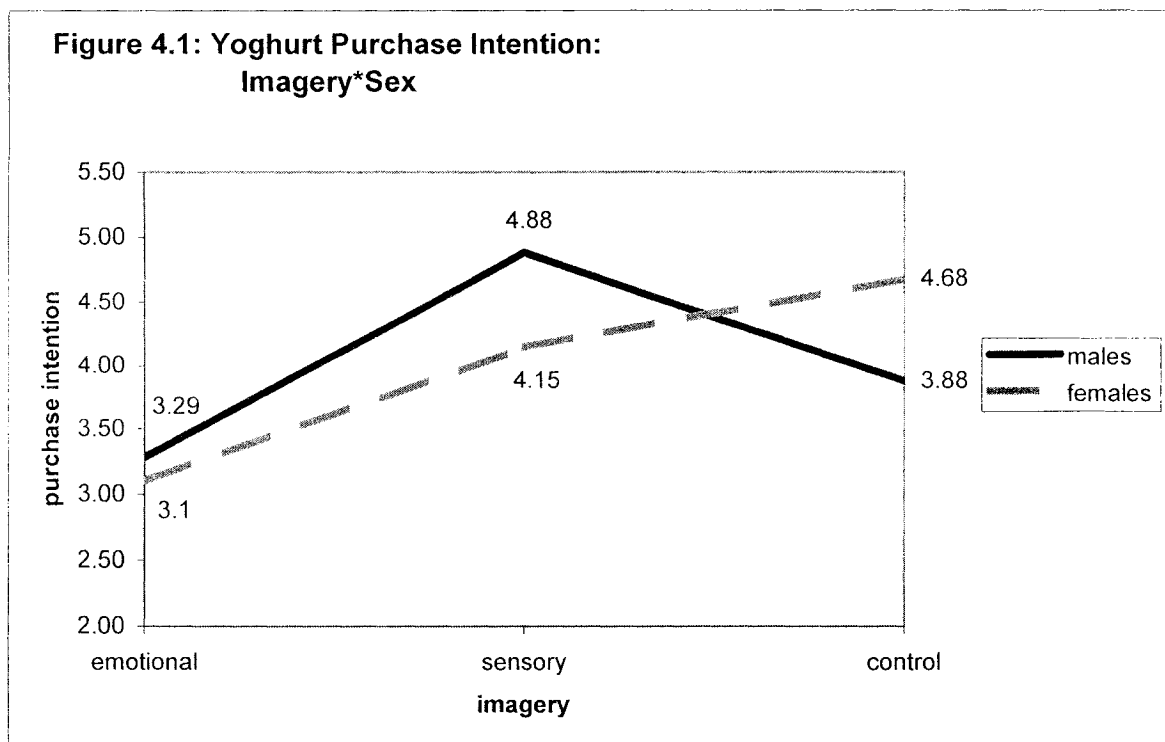
Purchase Intention. Table 4.10 reflects within-subject effects, between-subject effects, and cell means for purchase intention. Results reflect the influence of novelty of the product on intention to purchase. A significant main effect of within-subject novelty of product on intention to purchase ($F(1,150) = 12.62, p<.05$) It is evident that intention to purchase was higher for the familiar home-style yoghurt ($M_{\text{familiar}}=4.31, M_{\text{novel}}=3.67$).

Table 4.10 Purchase Intention, Yoghurt

Tests of Within-Subjects Contrasts			
Source	F	Sig.	
Novel	12.64	.00	*
Novel*Imagery	.87	.42	
Novel*Sex	.19	.66	
Novel*Imagery*Sex	1.17	.31	
*p<.05			
Tests of Between-Subjects Effects			
Source	F	Sig.	
Image	12.15	.00	*
Sex	.03	.86	
Image*Sex	3.59	.03	*
*p<.05			
Means			
Familiar Product (Home-style Yoghurt)	Males	Females	Total
Emotional	3.68	3.24	3.47
Sensory	4.88	4.56	4.72
Control	4.32	5.20	4.76
Total	4.28	4.34	4.31
Novel Product (Soy Yoghurt)	Males	Females	Total
Emotional	2.89	2.96	2.92
Sensory	4.88	3.74	4.30
Control	3.44	4.16	3.80
Total	3.72	3.62	3.67

Results in Table 4.10 also show a significant main effect of between-subject imagery on purchase intention ($F(2,150) = 12.15, p<.05$). Intention to purchase for the familiar home-style yoghurt was slightly higher in the control condition ($M_{\text{control}}=4.76$), followed by the sensory condition ($F_{\text{sensory}}=4.72$) and the emotional condition ($M_{\text{emotional}}=3.47$). However, for the novel product, soy yoghurt, purchase intention was highest in the sensory condition ($M_{\text{sensory}}=4.30$) followed by control ($M_{\text{control}}=3.80$) and emotional ($M_{\text{emotional}}=2.92$).

Sex, a between-subject factor, was not found to have a significant impact on purchase intention. However, imagery and sex, when considered together, were found to be significant ($F(2,150) = 3.59, p < .05$) as viewed in Figure 4.1. For yoghurt, men reflected a higher level of intention to purchase in both the emotional ($M_{\text{males}}=3.29$, $M_{\text{females}}=3.10$) and the sensory ($M_{\text{males}}=4.88$, $M_{\text{females}}=4.15$) conditions. Women exhibited higher levels of intention to purchase in the control condition only ($M_{\text{females}}=4.68$, $M_{\text{males}}=3.88$).



4.3.4. Results for Chocolate. As with yoghurt, a multivariate repeated analysis was conducted with novelty of product as a within-subjects factor and sex and imagery as between-subjects factors. Results presented in Table 4.13 show a significant main effect of within-subject novelty of product [Wilks' Lambda = .837, $F(3,148) = 9.60, p < .05$].

Results also show that novel and imagery considered together is significant [Wilks' Lambda = .855, $F(6,296) = 4.02$, $p < .05$]. A significant main effect of between-subjects imagery [Wilks' Lambda = .740, $F(6,296) = 8.03$, $p < .05$] was also revealed.

Table 4.11 Wilks' Lambda, Chocolate

	Wilks' Lambda	F-Value	Sig.
Within Subjects			
Novel	.84	9.60	.00 *
Novel*Image	.86	4.02	.00 *
Novel*Sex	.97	1.34	.26
Novel*Image*Sex	.96	1.41	.21
Between Subjects			
Image	.74	8.03	.00 *
Sex	.96	1.96	.12
Image*Sex	.95	1.25	.28

* $p < .05$

Attitude Towards the Ad. Results for within-subject contrasts, between-subject effects, and cell means are presented in Table 4.12. Results show a significant main effect of within-subject novelty of the product ($F(1,150) = 6.33$, $p < .05$). It is evident that liking of the ad was higher for the familiar milk chocolate than it was for the novel peppercorn chocolate ($M_{\text{familiar}}=3.91$, $M_{\text{novel}}=3.6$).

Between-subject imagery was also significant ($F(2,150) = 24.60$, $p < .05$). For the home-style yoghurt, liking of the ad was highest for sensory imagery ($M_{\text{sensory}}=4.62$), followed by control ($M_{\text{control}}=4.08$) and emotional ($M_{\text{emotional}}=3.06$). This was similar for the soy product, where A_{ad} was also highest when the imagery used was sensory ($M_{\text{sensory}}=4.56$), followed by control ($M_{\text{control}}=3.59$) and emotional ($M_{\text{emotional}}=2.55$).

Table 4.12 Attitude Toward the Ad, Chocolate

Tests of Within-Subjects Contrasts			
Source	F	Sig.	
Novel	6.33	.01 *	
Novel*Imagery	1.15	.32	
Novel*Sex	.09	.76	
Novel*Imagery*Sex	1.61	.20	
*p<.05			
Tests of Between-Subjects Effects			
Source	F	Sig.	
Image	24.60	.00 *	
Sex	3.66	.06	
Image*Sex	.97	.38	
*p<.05			
Means			
Familiar Product (Home-style Yoghurt)			
	Males	Females	Total
Emotional	3.19	2.93	3.06
Sensory	4.96	4.24	4.62
Control	4.12	4.04	4.08
Total	4.10	3.71	3.91
Novel Product (Soy Yoghurt)			
	Males	Females	Total
Emotional	3.08	2.04	2.55
Sensory	4.74	4.36	4.56
Control	3.54	3.64	3.59
Total	3.80	3.31	3.56

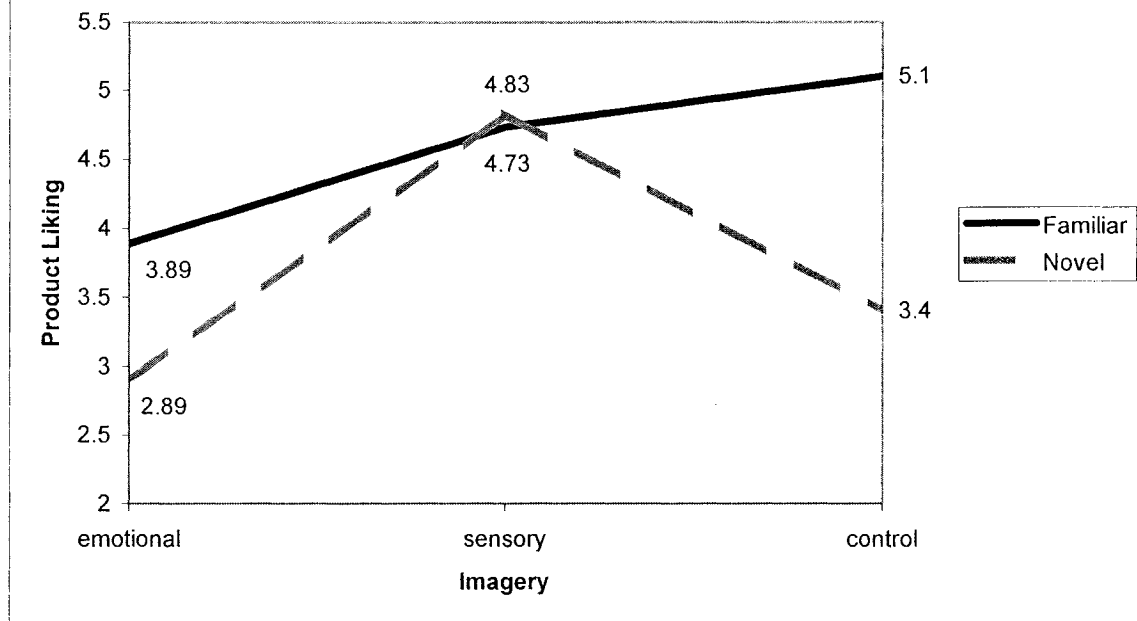
Attitude Toward the Product. The results for within-subjects contrasts, between-subjects effects, and cell means are displayed in Table 4.13. Results show a significant main effect of within-subject novelty of the product ($F(1,150) = 25.92, p<.05$). The familiar product, milk chocolate, was viewed as more favourable than the novel peppercorn chocolate ($M_{\text{familiar}}=4.56, M_{\text{novel}}=3.70$).

Table 4.13 Attitude Toward the Product, Chocolate

Tests of Within-Subjects Contrasts			
Source	F	Sig.	
Novel	25.92	.00 *	
Novel*Imagery	9.50	.00 *	
Novel*Sex	1.70	.19	
Novel*Imagery*Sex	4.14	.02 *	
*p<.05			
Tests of Between-Subjects Effects			
Source	F	Sig.	
Image	13.37	.00 *	
Sex	.00	.97	
Image*Sex	.71	.49	
*p<.05			
Means			
Familiar Product (Home-style Yoghurt)			
	Males	Females	Total
Emotional	3.58	4.19	3.89
Sensory	4.81	4.64	4.73
Control	5.00	5.20	5.10
Total	4.47	4.66	4.56
Novel Product (Soy Yoghurt)			
	Males	Females	Total
Emotional	3.50	2.30	2.89
Sensory	4.81	4.84	4.83
Control	3.15	3.64	3.40
Total	3.84	3.56	3.70

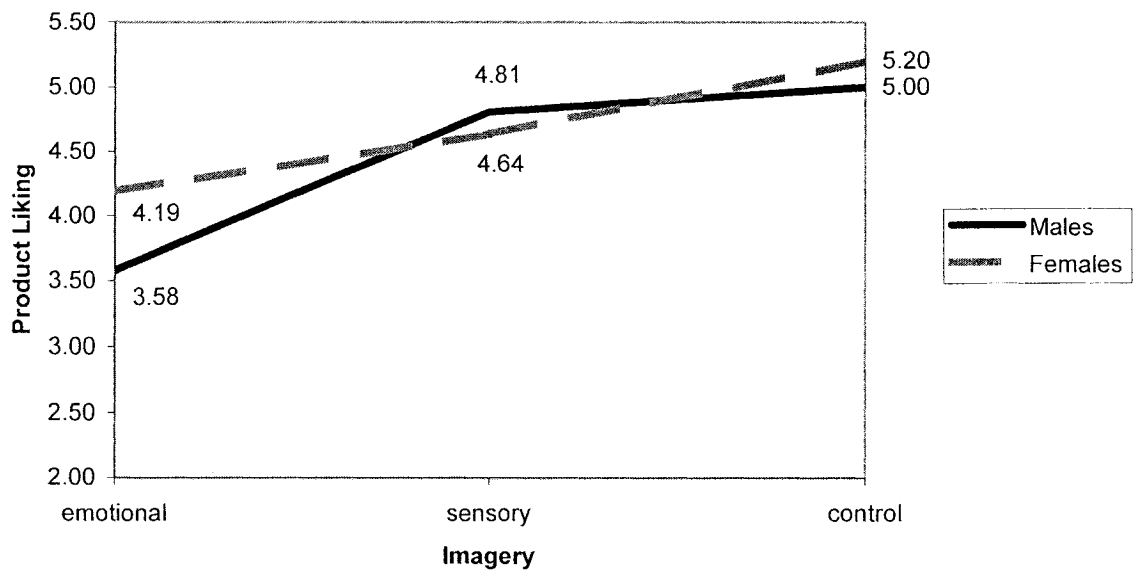
A significant interaction was found between within-subjects novelty and imagery ($F(2,150) = 9.50, p<.05$). This interaction is displayed in Figure 4.2 below. When both novelty and imagery are taken into account, it is the familiar milk chocolate is superior to the novel chocolate in the emotional condition ($M_{\text{familiar}}=3.89, M_{\text{novel}}=2.89$) and in the control condition ($M_{\text{familiar}}=5.10, M_{\text{novel}}=3.40$). Interestingly, the novel, peppercorn chocolate is slightly preferred over the familiar chocolate in the sensory condition ($M_{\text{novel}}=4.83, M_{\text{familiar}}=4.73$).

Figure 4.2: Chocolate Attitude toward Product: Novelty*Imagery

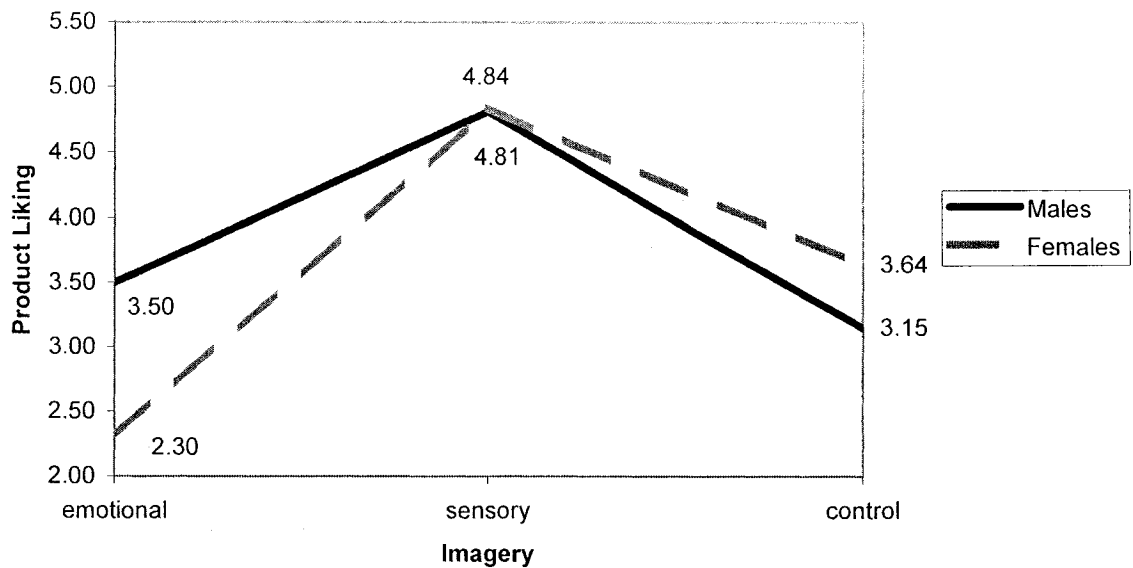


An additional interaction was significant for within-subjects novelty of the product, imagery, and sex ($F(2,150) = 3.24, p < .05$). From Figure 4.3 below, it is evident that for the familiar product, women were superior to men in the emotional condition ($M_{\text{females}} = 4.19, M_{\text{males}} = 3.58$) and the control condition ($M_{\text{females}} = 5.20, M_{\text{males}} = 5.00$). However, men were superior to females in the sensory condition, reporting higher liking of the familiar product than women ($M_{\text{males}} = 4.81, M_{\text{females}} = 4.64$). Figure 4.4 displays the result for the novel product. For this product, males reported higher levels of product liking in the emotional condition ($M_{\text{males}} = 3.50, M_{\text{females}} = 2.30$) while women were superior to males in both the sensory ($M_{\text{females}} = 4.84, M_{\text{males}} = 4.81$) and the control conditions ($M_{\text{females}} = 3.64, M_{\text{males}} = 3.15$).

**Figure 4.3: Familiar Chocolate Attitude toward Product:
Novelty*Imagery*Sex**



**Figure 4.4: Novel Chocolate Attitude toward Product:
Novelty*Imagery*Sex**



Results also show a significant main effect for between-subjects imagery ($F(2,150) = 13.37, p < .05$). Attitude toward the familiar milk chocolate was highest in the control condition ($M_{\text{control}}=5.10$), followed by sensory ($M_{\text{sensory}}=4.73$) and emotional ($M_{\text{emotional}}=3.89$). However, attitude toward the novel product was highest in the sensory condition ($M_{\text{sensory}}=4.83$), followed by the control ($M_{\text{control}}=3.39$) and emotional ($M_{\text{emotional}}=2.89$) conditions.

Purchase Intention. Table 4.14 displays the results for within-subjects contrasts, between-subjects effects, and cell means. A significant main effect was found for within-subject novelty of product was found ($F(1,150) = 21.46, p < .05$). Intent to purchase was highest for the familiar product ($M_{\text{familiar}}=4.19, M_{\text{novel}}=3.41$).

Table 4.14 Purchase Intention, Chocolate

Tests of Within-Subjects Contrasts		
Source	F	Sig.
Novel	21.46	.00 *
Novel*Imagery	5.34	.01 *
Novel*Sex	2.55	.11
Novel*Imagery*Sex	3.24	.04 *
*p<.05		
Tests of Between-Subjects Effects		
Source	F	Sig.
Image	12.16	.00 *
Sex	.18	.67
Image*Sex	.10	.90
*p<.05		

Means			
Familiar Product (Home-style Yoghurt)	Males	Females	Total
Emotional	3.12	3.81	3.47
Sensory	4.37	4.40	4.38
Control	4.85	4.64	4.75
Total	4.11	4.27	4.19
Novel Product (Soy Yoghurt)	Males	Females	Total
Emotional	3.19	2.15	2.66
Sensory	4.26	4.32	4.29
Control	3.35	3.24	3.29
Total	3.61	3.21	3.41

A significant interaction was found between within-subjects novelty and imagery ($F(2,150) = 5.34, p < .05$). Intention to purchase was higher for the familiar product in the emotional ($M_{\text{Familiar}}=3.47, M_{\text{Novel}}=2.66$), sensory ($M_{\text{Familiar}}=4.38, M_{\text{Novel}}=4.29$), and control ($M_{\text{Familiar}}=4.75, M_{\text{Novel}}=3.29$) conditions. Referring to Figure 4.4, it is evident that when both novelty and imagery are taken into account, that intention to purchase the familiar milk chocolate is consistently higher in each of the conditions with purchase intention highest in the control condition where images are absent. It is also evident that imagery has a large impact on the intention to purchase the novel product, with intention to purchase much higher in the sensory condition.

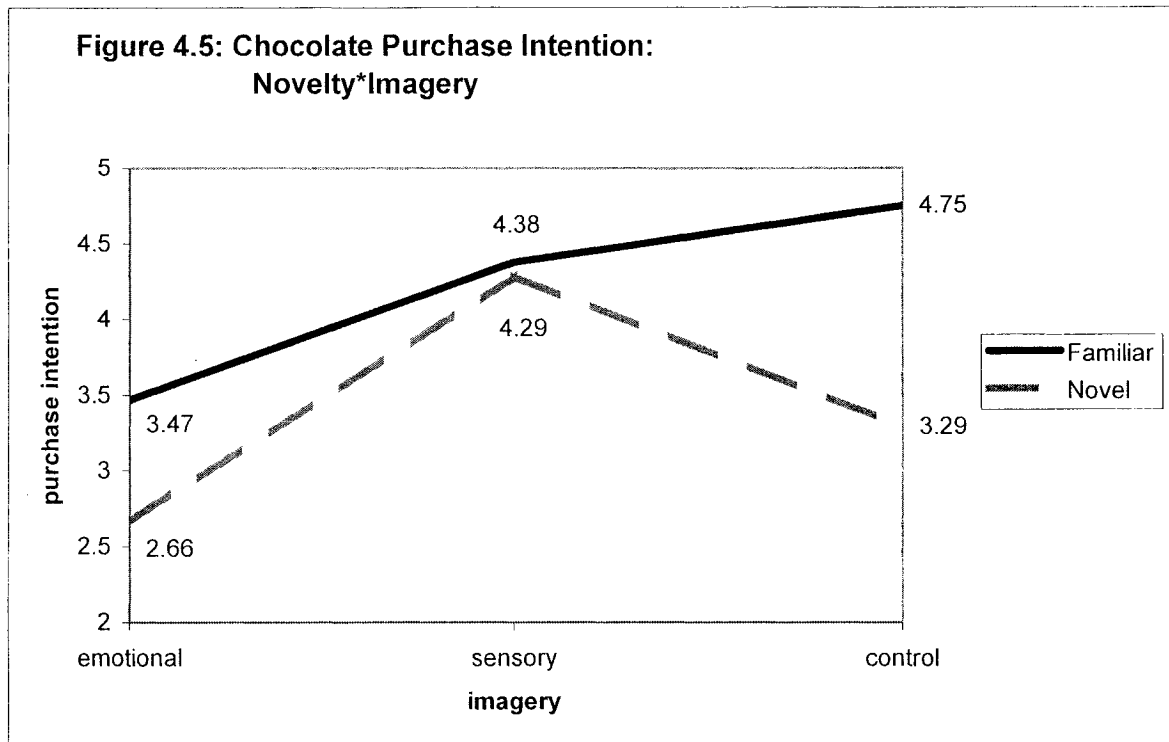
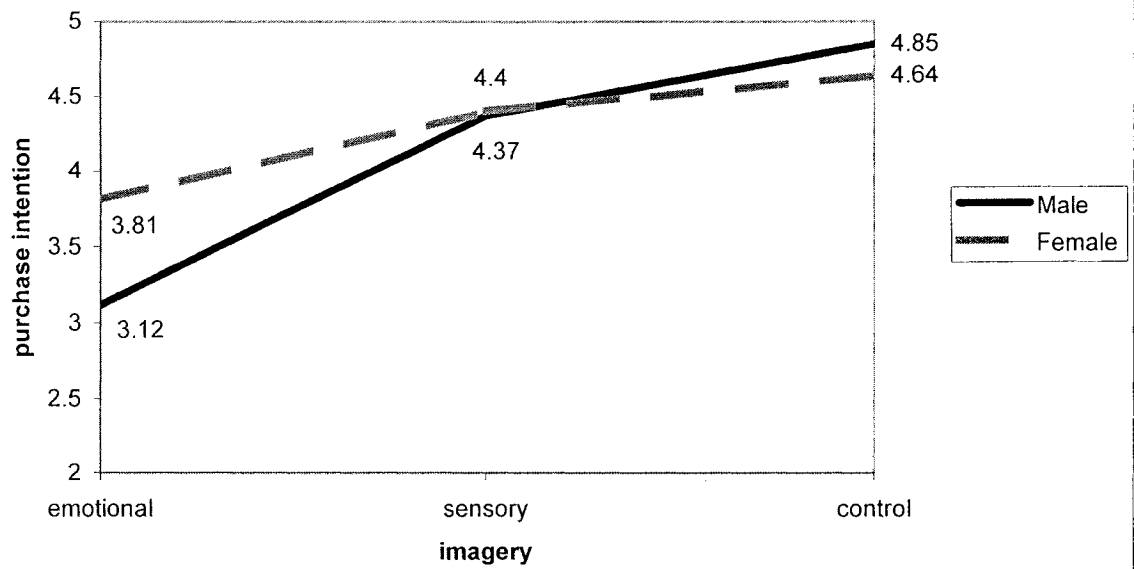
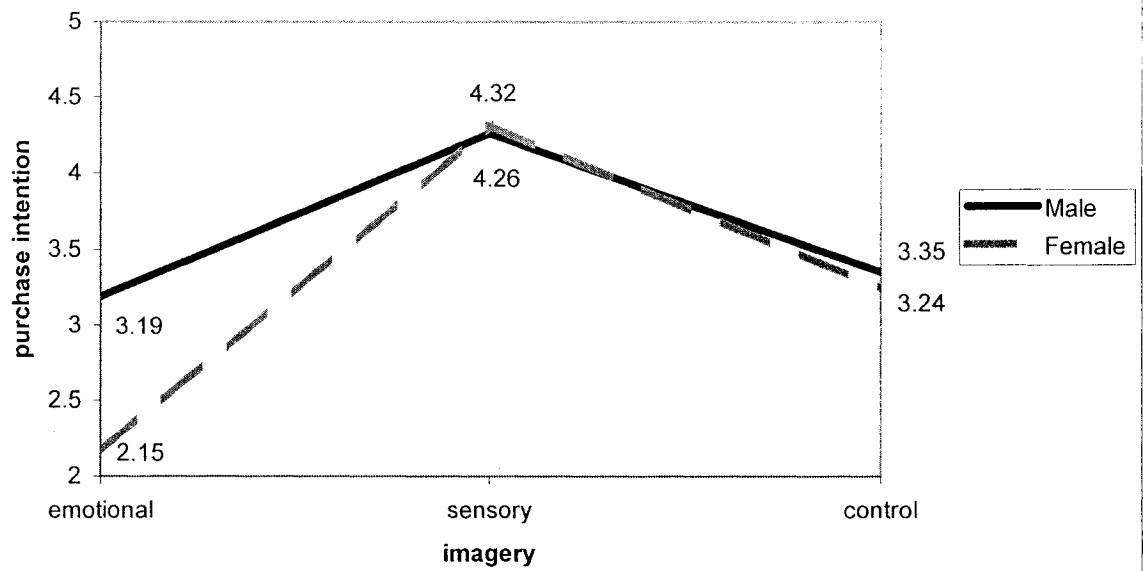


Table 4.14 also reveals a significant interaction for within-subjects novelty of the product, type of imagery, and sex ($F(2,150) = 3.24, p < .05$). Figure 4.6 below reflects this interaction for the familiar product. For the familiar product, women were superior to men in both the emotional ($M_{\text{female}}=3.81, M_{\text{males}}=3.12$) and sensory ($M_{\text{females}}=4.4, M_{\text{males}}=4.37$) conditions. Men were superior to women in the control condition ($M_{\text{males}}=4.85, M_{\text{females}}=4.64$). For the novel peppercorn chocolate (Figure 4.7, below), it is men who are superior to women in the emotional ($M_{\text{males}}=3.19, M_{\text{females}}=2.15$) and control ($M_{\text{males}}=3.35, M_{\text{females}}=3.24$), while women report higher purchase intention in the sensory condition ($M_{\text{female}}=4.32, M_{\text{males}}=4.26$)

**Figure 4.6: Chocolate Purchase Intention:
Novelty*Imagery*Sex**



**Figure 4.7: Chocolate Purchase Intention:
Novelty*Imagery*Sex**



It is evident from Table 4.14, that a significant main effect of between-subjects imagery was also found ($F(2,150) = 12.16, p < .05$). For the familiar product purchase intention was highest in the control condition (4.75), followed by the sensory condition (4.38) and the emotional condition (3.47). For the novel product, purchase intention was highest in the sensory condition (4.29), followed by the control condition (3.29) and the emotional condition (2.66). Table 4.18 reflects the mean values for each cell.

4.4 Discussion

The results of study 2 offer some insight into the relationship between pleasure, mental imagery, and sex differences associated with the liking for familiar and novel foods. Though imagery was significant for both product classes, Study 2 reflects the difficulty of manipulating mental imagery. Following from mental imagery research it was expected that the use of images would increase vividness and attitude toward the ad, attitude toward the product, and purchase intention. However, this was not always the case. While these measures were relatively high in the control condition, where no pictures were used to encourage imagery, they were consistently low in the emotional condition, which incorporated visual images. MacInnis and Price (1987) identified a close tie between mental imagery and the senses. They defined mental imagery as “a process (not a structure) by which sensory information is represented in working memory” (p. 473). It is possible that the emotional images used in this study lacked this link necessary to activate the senses and that nuances between mental imagery of a sensory nature and mental imagery of an emotional nature may exist. The emotional images used in this study, although perceived as more emotionally-charged in the pretest,

may have lacked the necessary link to the senses to generate mental imagery which had an impact and was involving. This suggests that emotionally-driven mental imagery may be more difficult to produce and manipulate than sensory-driven imagery. Results of Study 1 clearly revealed many emotional associations and images related to food. Since such imagery appears to be naturally occurring, its features and impact on consumer responses should be investigated further.

In the sensory imagery condition, images of yogurt and chocolate that convey each product's taste and sensory qualities were used whereas images in the emotional imagery condition were more abstract. The fact that results did not confirm the expected effect of emotional imagery suggests that this type of imagery may need to be tied to the product attributes to a greater extent than was done here. Also, as Gobé (2001) recently pointed out, crafting an emotional bond between consumers and a brand is a very difficult process and may require a series of integrated marketing efforts. Thus, future efforts to understand the impact of emotional imagery may need to incorporate various forms of images, from product packaging to advertising.

A number of interesting interactions between novelty of the product and imagery resulted from the study. One key finding of study 2 pertained to high liking and purchase intention of the novel food in the sensory condition. However, for the familiar product, product liking and purchase intention are higher in the control condition. This raises the possibility that when a product is well-known there are differences in the images created for the ad and the images created by the individual. It is possible that the images experienced by the individual provide a better fit for their experiences with the product than the advertisers' images. Jones, Stanaland, and Gelb (1998) propose that, particularly

where females are concerned, a greater preference for control over imagery exists whereby more benefits are generated by creation of one's own images.

Surprisingly sex differences did not emerge as a significant factor in the study. However, some interesting interactions did occur which provide some insights into the relationship between imagery and novelty of the product. Men and women differed in their liking of the products and purchase intention depending on the imagery condition. Men were more likely to purchase yoghurt in the sensory condition, while women were much more likely to purchase yoghurt in the control condition. However, this pattern was not the same for chocolate, where purchase intention was higher in the control condition for familiar chocolate and higher in the sensory condition for the novel chocolate. The results of study 2 reflect the importance of product and imagery in targeting specific sexes. For yoghurt clear differences existed between the purchase intention of men and women, depending on the imagery condition. However, for chocolate, men and women appeared to follow a similar pattern in their approach to novel and familiar foods in each of the imagery conditions.

There are a number of possible explanations as to why sex differences did not emerge as expected. For the chocolate, significant differences in familiarity with chocolate were uncovered at the onset, with women reporting higher familiarity with chocolate than men. This could have accounted for any of the differences that were expected but did not emerge. Significant differences between men and women were also found in the sensation seeking scale. Men had higher levels of sensation seeking than women. This could have also influenced the outcomes, accounting for sex differences and leading to low sex differences overall.

CHAPTER 5

LIMITATIONS AND FUTURE RESEARCH

5.1 Limitations

There are a number of limitations of both study 1 and study 2 that must be addressed. In study 1, one of the main limitations is related to the sample. The number of men who participated in the study was 11 and the number of women in the study was 23. Though this study was largely exploratory, it would have still been beneficial to have a more gender-balanced sample. An additional consideration is the source of images used in the study. As commercial ads were the only type of ads submitted, this allowed the study to be one of print images. However, strict use of commercial images may have limited the scope of the images. As noted by Grunert (1994), food advertising is heavily targeted towards women. This could have influenced the number of ads that women submitted. A final consideration also involves the use of commercial images in the study. While the images were meant to act as metaphors for pleasures associated with food, limited access to images may have had an influence. For instance, a participant may have had a specific food and pleasure that they would have liked to express, but inability to find images to depict these relationships may have altered their reported experiences of pleasure.

A number of methodological issues surface in study 2 that need to be addressed. The study was originally set up to minimize fatigue and the number of participants required for the study, as well as allowing use of similar ads in the emotional condition for both products. Therefore, participants viewed ads for both products (yoghurt and

chocolate), one in the sensory condition and one in the emotional condition. This made it necessary to analyze the data for each product separately.

A second limitation of study 2 centres on the manipulation check. It is evident that while the sensory ads were viewed as sensory and the emotional ads were viewed as emotional, there were no significant differences between the emotional and control conditions. Surprisingly, the range of the mean values for each of the products in each of the conditions was minimal. For instance, the ads for chocolate in the sensory condition were highly sensorial and it was expected that they would be rated accordingly by participants. This indicates that there are some difficulties in creating clear messages of pleasure, something which must be addressed in future studies. A second limitation concerning the manipulation check was the wording of the manipulation check for the emotional condition. Participants were asked whether the ad got them to think and make them relate to the product on an emotional level. Both thought and emotion were included in the question making it impossible to tell whether the participants related to the ad on a cognitive (intellectual) or emotional level.

A third limitation results from the selection of measures used in study 2. Three dependent variables were used for each of the ads. Single measures were used as opposed to multi-item scales. It would be favourable in future studies to use multi-item scales which will increase the strength of the measures.

5.2 Future Research

There are a number of directions that can be taken in the future research of the topic. One direction concerns developing a method to connect the images that

participants related to their experiences of pleasure with food in study 1 with an experiment, such as that of study 2. Rich detail was gathered from the participants of study 1; however, it is evident that translating the imagery experienced by one individual into an image that appeals to a large number of consumers is inherently difficult. While in study 1 the images of pleasure originated from the participants, study 2 used images developed to target a wide range of participants. This highlights a possible discrepancy between the images an individual associated with food and the images appropriate for a wider audience. Further research needs to examine this discrepancy to determine how individual experiences can be translated and summarized to appeal to a larger group.

A second direction for future research involves the further exploration of pleasure in food consumption and its link to sex differences. It appears as though there is a relationship between health and indulgence and sex that needs to be explored. As seen in study 1, health and indulgence may not be opposites as traditionally thought. Women have been documented as having higher trends toward health than men (e.g. Fagerli and Wandel, 1999), however, they clearly associate pleasure with food (study 1) and pleasure advertised clearly affects their evaluation of both familiar and novel products (study 2). Intellectual pleasure is one of the least understood of the pleasures. The experience of intellectual pleasure is clear, by women in particular, and deserves additional attention.

A third consideration of imagery lies in the strong impact of the control condition on the dependent measures. Liking of a familiar product and intention to purchase a familiar product were highest in the control condition, particularly for women, which draws attention to the need to understand the relationship between familiarity and imagery. Again, this may tie into the sensory nature of pleasure. It is possible that an

individual has numerous prior experiences with a familiar product, meaning they may also have very detailed sensory information related to these experiences stored. It may be the case that imagery is not needed to extract these experiences and that imagery is triggered by the text itself. Indeed, concrete wording is also found to enhance the vividness of imagery experiences (e.g. Burns et al., 1993).

A fourth direction for future research would be to move both studies out of a lab context. Moving out of a lab context will provide useful insight into the relationship between imagery, product, and sex. While it was in the sensory condition that liking of the product and purchase intention of the novel chocolate was highest, in a previous study by Tuorila and her colleagues (1994) it was found that increasing sensory information leads to a decrease in liking of a novel product. However, in the study by Tuorila and her colleagues, actual food samples were incorporated in testing the impact of information levels and participant ratings of a set of familiar and novel products. Arvola, Lähteenmäki, and Tuorila (1999) found that attitude measures taken before taste are a poor measure of purchase intention after tasting. In future studies, applying a methodology whereby the participant views ads which emphasized particular pleasures and then had the opportunity to sample products would further understanding on this topic. In addition, by taking the experiment out of the lab and having the opportunity to discuss the pleasures and mental images the participant associate with their experience would be one method to obtain richer detail and insight. In study 1, very explicit information was obtained from the participant concerning their imagery and experiences of pleasure with foods. However in study 2, there are few indications of why certain

results were obtained, for instance, the meaning behind the control condition. Moving out the lab may provide some of these key valuable insights.

5.3 Managerial Implications

There are a number of managerial implications that can be drawn from these studies. Careful attention to the mental association and images of pleasure when choosing advertising strategies can prove beneficial for marketing professionals. Careful selection of advertisements can have a strong influence on attitude toward the ad, attitude toward the product, and purchase intention, as was evident in study 2. Contrary to traditional approaches, pleasurable experiences are distinct. By tapping into these pleasures, marketing professionals may be in a better position to understand and reach their desired target audience.

From study 1 it is evident that a wide range of images are associated with pleasures, allowing marketing professionals to tailor a strategy that fits their consumer and their product. However, it is also important that marketing professionals explore the hedonic appeals and images used to trigger pleasures. Marketing professionals may falsely believe that they are reaching their target audience by positioning their product as having either cognitive or sensory benefits. In fact, consumers may not share a similar view of the product. By using appeals that match consumer expectation, there is a possibility that consumers will be more receptive to advertising. For instance, if consumers have a preference for sensory appeals for chocolate, marketers would be in a better position to reach these consumers by using these appeals. In the advertising of novel foods, such as soy products, it is often a healthy approach which is taken. It is

possible, however, that participants are more receptive to sensory approaches, as was the case with the novel chocolate in study 2. One example of a company who has managed to adapt their strategy to incorporate a variety of appeals is Häagen Dazs ice cream. Both emotional and sensory appeals have been used repeatedly to create a sense of indulgence as well as comfort. This again relates to the position of Gobé (2001) who highlighted the importance of the entire marketing strategy in creating strong emotional ties between the consumer and the brand.

A third managerial implication relates to the marketing of both familiar and unfamiliar products. A large number of new products are introduced to the market, only to fail as quickly as they have appeared. However, by associating an unfamiliar product with a familiar product, the learning process may be enhanced (Alessandrini and Sheik, 1983). Alessandrini and Sheik discuss the use of similar advertisements to improve this process. There is also evidence that forging this relationship is beneficial where food marketing is concerned. As noted by Tuorila and her colleagues (1994), by creating a bond between familiar and novel food products, acceptance of the novel product can increase significantly.

5.4 Conclusions

Strong mental images are associated with pleasurable food consumption. This was revealed in study 1 where participants selected and described the pleasures they associated with food. It was also true in study 2 where the imagery incorporated into advertisements affected participant liking of the ad, liking of the product, and intention to purchase the product. The results draw attention to some important aspects of hedonic

food consumption which are being overlooked, namely the importance of imagery and of multiple pleasures which appear to influence both attitudes and intent. While results concerning sex were mixed, there are some indications that pleasure and imagery does differ for both, something which requires further exploration.

REFERENCES

- Abrams, H.L. (1987). The Preference for Animal Protein and Fat: A Cross-Cultural Survey. In M. Harris and E.B. Ross (eds), *Food and Evloutation: Toward a Theory of Human Food Habits*. Phladelphia: Temple University Press.
- Alesandrini, K. and Sheikh, A.A. (1983). Research on Imagery: Implications for Advertising. In *Imagery: Current Theory, Research, and Application*, Sheikh, A. (ed). New York: John Wiley & Sons.
- Anand-Keller, P. and McGill, A.L. (1994). Differenes in the Relative Influence of Product Attributes under Alternative Processing Conditions: Attribute Importance versus Attribute Ease of Imagability, *Journal of Conusmer Psychology*, 3(1), 29-49.
- Arvola, A., Lähteenmäki, L., and Tuorila, H. (1999). Predicting the Intent to Purchase Unfamiliar and Familiar Cheeses: The Effects of Attitudes, Expected Liking and Food Neophobia. *Appetite*, 32, 113-126.
- Backstrom, A., Pirttila-Backman, A.-M, and Tuorila, H. (2003). Dimensions of novelty: a social representation approach to new foods. *Appetite*, 40, 299-307.
- Belasco, W. (2002). Food Matters: Perspectives on an Emerging Field. In W. Belasco and P. Scranton (eds.), *Food Nations: Selling Taste in Consumer Societies*, New York: Routledge.
- Burns, A., Biswas, A., and Babin, L. (1993). The Operation of Visual Imagery as a Mediator of Advertising Effects. *Journal of Advertising*, 22(2), 71-85.
- Basow, S.A. and Kobrynowicz, D. (1993). What is She Eating? The Effects of Meal Size on Impressions of a Female Eater. *Sex Roles*, 28(5/6), 335-344.
- Buss, D. (1995). "The Evolutionary Psychology of Human Social Strategies." In E. Tory Higgins and Arie W. Kruglanski (eds.), *Social psychology: Handbook of Basic Principles*. New York: The Guilford Press
- Cabanac, M. (1971). The Physiological Role of Pleasure. *Science*, 173, 1103-1107.
- Chevalier, M. (2000). Le consommateur de demain: plaisir, dettes et Internet. *Commerce*, Novembre, 58-60, 64.
- Conner, M.T. (1994). Accounting for Gender, Age and Socioeconomic Differences in Food Choice, *Appetite*, 23, 195.

- Damasio, A. (1999). *The Feelings of What Happens: Body and Emotion in the Making of Consciousness*. New York: Harcourt Brace.
- Dhar, R. and Wertenbroch, K. (2000). Consumer Choice Between Hedonic and Utilitarian Goods, *Journal of Marketing Research*, 37(Feb), 60-71.
- Dubé, L. (1995). Advertising and Food Preferences. *Proceedings from Health and Pleasure at the Table*. Dubé, L., Le Bel, J., Tougas, C. & Troche, V. (eds). Montreal: Enjeux actuels du marketing dans l'alimentation et la restauration.
- Dubé, L. and Lebel J. (2003). The categorical structure of pleasure," *Cognition and Emotion*, 17, 263-297.
- Dubé, L., Le Bel, J., Tougas, C. & Troche, V. (1995). *Proceedings from Health and Pleasure at the Table*. Montreal: Enjeux actuels du marketing dans l'alimentation et la restauration.
- Ellen, P. and Bone, P. (1992). The Generation and Consequences of Communication-evoked Imagery. *Journal of Consumer Research*, 19(June), 93-104.
- Ewing, M., Napoli, J., & Du Plessis, E. (1999). Factors Affecting In-Market Recall of Food Product Advertising. *Journal of Advertising Research*, 39(4), 29-38.
- Fagerli, R. and Wandel, M. (1999). Gender Differences in Opinions and Practices with Regards to a "Healthy Diet." *Appetite*, 32, 171-190.
- Foroohar, R., (2001). Eat, Drink And Go Slow. *Newsweek Magazine*, July 2, 21-24.
- Gobé, M. (2001). *Emotional Branding: the new paradigm for connecting brands to people*. New York: Allworth Press.
- Goldman, D. (1999). Paradox of Pleasure. *American Demographics*, May, 50-61.
- Grogan, S., Bell, R., and Conner, M. (1997). Eating Sweet Snacks: Gender Differences in Attitudes and Behaviour. *Appetite*, 28, 19-31.
- Grunert, S. (1994). On Gender Differences in Eating Behavior as Compensatory Consumption, in J. Arnold Costa (ed.), *Gender Issues and Consumer Behavior*. Thousand Oaks: Sage Publications.
- Hirschman, E.C. & Holbrook, M.B. (1982). Hedonic Consumption: Emerging Concepts, Methods, and Propositions. *Journal of Marketing*, 46, 92-101.
- Hoch, S. (2002). Oh My God? Are We Really What We Eat? *ACR News*, Spring, 1-5.

- Johansson, L. & Frost Andersen, L.F. (1998). Who eats 5 A Day?: Intake of fruits and vegetables among Norwegians in Relation to gender and lifestyle. *Journal of the American Dietetic Association*, June(98), 689-691.
- Jones, M., Stanaland, A. and Gelb, B. (1998). Beefcake and Cheesecake: Insights for Advertisers, *Journal of Advertising*, 27(2), 1-19
- Kahneman, D., Wakker, P., Sarin, R. (1997). Back to Bentham? Explorations of Experienced Utility, *The Quarterly Journal of Economics*, 112, 375-405.
- Kosslyn, S., Seger, K., Pani, J., and Hillger, L. (1990). When is Imagery Used in Everyday Life? A Diary Study. *Journal of Mental Imagery*, 14(3/4), 131-152.
- Kubovy, M. (1999). On the Pleasures of the Mind, in D. Kahneman, E. Diener, and N. Schwarz (eds.), *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation.
- Le Bel, J.L. & Dubé, L. (1998). Understanding Pleasure: Source, Experience, and Remembrances, In *Advances in Consumer Research*, Alba, J.W. & Hutchinson, J.W. (eds), 25, 176-180.
- Laeng, B., Berridge, K.C. & Butter, C.M. (1993). Pleasantness of a Sweet Taste during Hunger and Satiety: Effects of Gender and "Sweet Tooth." *Appetite*, 21, 247-254.
- Lahlou, S. (1995). Qualitative Market Research and Concept Development: Representations of Food and Marketing Challenges. *Proceedings from Health and Pleasure at the Table*. Dubé, L., Le Bel, J., Tougas, C. & Troche, V. (eds). Montreal: Enjeux actuels du marketing dans l'alimentation et la restauration.
- Ledoux, J.E. (1996). *The Emotional Brain: The Mysterious Underpinnings of Emotional Life*. New York: Simon & Schuster.
- Logue, A. and Smith, M.E. (1986) Predictors of food preference in adult humans, *Appetite*, 7, 109-125.
- Macht, M. (1999). Characteristics of Eating in Anger, Fear, Sadness and Joy. *Appetite*, 33, 129-139.
- MacInnis, D.J., & Price, L. L. (1987). The Role of Imagery in Information Processing: Review and Extensions. *Journal of Consumer Research*, 13(March), 473-491.
- Mattila, A. (2000). The role of narratives in advertising of services. *Journal of Service Research*, 3(1), 35-45.

- McGill, L. and Anand, P. (1989). The Effect of Vivid Attributes on the Evaluation of Alternatives: The Role of Differential Attention and Cognitive Elaboration. *Journal of Consumer Research*, 16(Sept), 188-196.
- Mintz, S. (1999). Sweet Polychrest. *Social Research*, 66(1), 85-101.
- Mintz, S. (2002). Food and Eating: Some Persisting Questions. In W. Belasco and P. Scranton (eds.), *Food Nations: Selling Taste in Consumer Societies*, New York: Routledge.
- Mooney, K.M., DeTore, J. & Malloy, K.A. (1994). Perceptions of Women Related to Food Choice. *Sex Roles*, 31(7/8), 433-442.
- Mooney, K.M. & Lorenz, E. (1997). The Effects of Food and Gender on Interpersonal Perceptions. *Sex Roles*, 36(9/10), 639-649.
- Mooney, K. & Walbourn, L. (2001). When college students reject food: not just a matter of taste. *Appetite*, 36, 41-50.
- Myers-Levy, J. & Maheswaran, D. (1991). Exploring Differences in Males' and Females' Processing Strategies. *Journal of Consumer Research*, 18(June), 63-70.
- Nisbett, R. and Ross, L. (1980). *Human Inference: Strategies and Shortcomings of Social Judgment*, New Jersey: Prentice-Hall Inc.
- Pine II, B.J. and Gilmore J.H. (1999). *The Experience Economy*. Boston: Harvard Business School Press.
- Pinker, S. and Kosslyn, S. (1983). Theories of Mental Imagery. In A. Sheikh (ed.), *Imagery: Current Theory, Research and Application*, New York: John Wiley and Sons Inc.
- Pliner, P. and Hobden, K. (1992). Development of a Scale to Measure the Trait of Food Neophobia in Humans. *Appetite*, 19, 105-120.
- Povey, R., Wellens, B., and Conner, M. (2001). Attitudes Towards Following Meat, Vegetarian and Vegan Diets: An Examination of the Role of Ambivalence. *Appetite*, 37, 15-26.
- Rappoport, L.H., Peters, G.R., Huff-Corzine, L., & Downey, R.G. (1992). Reasons for Eating: An Exploratory Cognitive Analysis. *Ecology of Food and Nutrition*, 28, 171-189.
- Rappoport, L.H., Peters, G.R., Downey, R.G., McCann, T. & Huff-Corzine, L. (1993). Gender and Age Difference in Food Cognition. *Appetite*, 20, 33-52.

- Richardson, A. (1969). *Mental Imagery*. London: Routledge & K. Paul.
- Richardson, A. (1983). Imagery: Definition and Types. In *Imagery: Current Theory, Research, and Application*, A. Sheikh (ed). New York: John Wiley & Sons, 3-42.
- Rozin, P. (1995). Thinking About Food and Choosing Food: Biological, Psychological, and Cultural Perspectives. In Dubé, L., Le Bel, J., Tougas, C. & Troche, V. (eds.), *Proceedings from Health and Pleasure at the Table*. Montreal: Enjeux actuels du marketing dans l'alimentation et la restauration.
- Rozin P., Pelchat, M., and Fallon, A., (1986). Psychological Factors Influencing Food Choice. In C. Ritson, L. Gofton and J. McKenzie (eds.), *The Food Consumer*. Chichester, England: John Wiley.
- Shiv, B. and Huber, J. (2000). The Impact of Anticipating Satisfaction on Consumer Choice. *Journal of Consumer Research*, 27(September), 202-216.
- Tiger, L. (1992). *The Pursuit of Pleasure*. Boston: Little, Brown, and Co.
- Tuorila, H., Meiselman, H., Bell, R., Cardello, A., and Johnson, W. (1994) Role of Sensory and Cognitive Information in the Enhancement of Certainty and Liking for Novel and Familiar Foods, *Appetite*, 23, 231-246.
- Yuille, J., and Catchpole, M. (1977). The Role of Imagery in Models of Cognition. *Journal of Mental Imagery*, 1, 171-180.
- Zajonc, R.B. (1980). Feeling and Thinking: Preferences Need No Inferences. *American Psychologist*, 35(2), 151-175.
- Zaltman, G. and Cloutier, R.H. (1995). Seeing the Voice of the Customer: Metaphor Based Advertising Research. *Journal of Advertising Research*, 35(4), 35-52.
- Zuckerman, M. (1979). Sensation seeking and risk taking. In C. E. Iazard (Ed.). *Emotions in personality and psychopathology*. New York: Plenum Press.

APPENDIX A
STUDY 2: SAMPLE QUESTIONNAIRE

Instructions

The following study consists of four sections. When provided, please read all instructions carefully before completing a section.

Please answer the questions to the best of your ability, as your answers are very important in this study. It is very important that you answer **ALL** of the questions. Please answer these questions in the order in which they are presented. Once you have completed a page please do **NOT** turn back to that page.

Please keep in mind that there are no right or wrong answers; we simply want your personal opinion.

Section A

Please indicate the appropriate answers to the following questions.

1. **Gender:** Male ☐ Female ☐
2. **Age:** _____
3. **What is your cultural/ethnic background (e.g., French, Hispanic, etc.)?** _____
4. **Do you consider yourself to be a (check only one box):**

 ☐ Meat eater

 ☐ Vegetarian

 ☐ Strict vegetarian (consume no animal products or by-products)
5. **Are you lactose intolerant, allergic to dairy, or cannot consume dairy products for any reason?**

 Yes ☐ No ☐
6. **How hungry are you at this moment?**

Not hungry 1 2 3 4 5 6 7 Extremely Hungry
At All

7. The following statements focus on your relationship with food. Please indicate to what extent you disagree or agree with each statement by circling the number that most appropriately reflects your answer.

	Disagree Strongly				Agree Strongly			
I am constantly sampling new and different foods.	1	2	3	4	5	6	7	
I don't trust new foods.	1	2	3	4	5	6	7	
If I don't know what is in a food I won't try it.	1	2	3	4	5	6	7	
I like foods from different countries.	1	2	3	4	5	6	7	
Ethnic food looks to weird to eat.	1	2	3	4	5	6	7	
At dinner parties, I will try a new food.	1	2	3	4	5	6	7	
I am afraid to eat things I have never had before.	1	2	3	4	5	6	7	
I am very particular about the foods I will eat.	1	2	3	4	5	6	7	
I will eat almost anything.	1	2	3	4	5	6	7	
I like to try new ethnic restaurants.	1	2	3	4	5	6	7	

8. This question focuses on your familiarity and knowledge with various food products. Please indicate your level of familiarity and knowledge for each of the following product categories:

	Very Unfamiliar				Very Familiar			
Cereal	1	2	3	4	5	6	7	
Wine	1	2	3	4	5	6	7	
Cheese	1	2	3	4	5	6	7	
Ice Cream	1	2	3	4	5	6	7	
Cookies	1	2	3	4	5	6	7	
Soy Products	1	2	3	4	5	6	7	
Potato Chips	1	2	3	4	5	6	7	
Chocolate	1	2	3	4	5	6	7	
Yoghurt	1	2	3	4	5	6	7	
Coffee	1	2	3	4	5	6	7	

9. Generally speaking, how much pleasure do each of the following foods bring you?

	Dislike Completely				Like Very Much		
Ice cream	1	2	3	4	5	6	7
Yoghurt	1	2	3	4	5	6	7
Coffee	1	2	3	4	5	6	7
Potato Chips	1	2	3	4	5	6	7
Cereal	1	2	3	4	5	6	7
Cookies	1	2	3	4	5	6	7
Wine	1	2	3	4	5	6	7
Chocolate	1	2	3	4	5	6	7
Cheese	1	2	3	4	5	6	7
Soy Products	1	2	3	4	5	6	7

10. For each pair of statements, circle the one that most closely matches your opinion. Circle only one option for each pair.

- A. I can't wait to get indoors on a cold day.
- B. I am invigorated by a brisk, cold day.

- A. I would like to hitchhike across the country.
- B. Hitchhiking is too dangerous a way to travel.

- A. I would like to go water-skiing.
- B. I would not like to go water-skiing.

- A. I can't stand watching a movie that I've seen before.
- B. There are some movies I enjoy seeing a second or even a third time.

- A. I would not like to learn to fly an airplane.
- B. I would like to learn to fly an airplane.

- A. A person should have some sexual experience before marriage.
- B. It's better if two married persons begin their sexual experience with each other.

- A. There is altogether too much portrayal of sex in movies.
- B. I enjoy watching many of the "sexy" scenes in movies.

- A. People who ride motorcycles have some unconscious need to hurt themselves.
- B. I would like to drive or ride on a motorcycle.

- A. I would like to go scuba diving.
- B. I prefer the surface of the water to the depths.

- A. I enjoy spending time in the familiar surroundings of home.
- B. I get very restless if I have to stay around home for any length of time.

Section B

In this section we are seeking your reaction to different print advertisements. You are asked to consider ads for two different products, followed by questions related to each of the ads. Please read the information provided on each of the alternatives carefully before responding.

We do request that you be careful and well-reasoned when responding to the questions that follow. Please don't let your imagination get the better of you. Rather, **try to make a logical assessment of the items presented.**

Imagine that you are selecting something to eat. You are considering the following two alternatives:

Home-style Yoghurt

- A fun alternative to traditional yoghurt
- It contains no artificial ingredients
- It is high in potassium and is cholesterol free
- Made with rich dairy ingredients
- It is available in a convenient individual serving
- A variety of delicious and tasty fruit flavours help to create a very pleasurable experience.

1. Considering the above description, please estimate how much you might like this product:

I would not like it at all 1 2 3 4 5 6 7 I would like it a lot

2. Considering the above information, how likely might you be to purchase this product?

I definitely would not buy it 1 2 3 4 5 6 7 I definitely would buy it

3. Overall, how much did you like this ad?

Did not like at all 1 2 3 4 5 6 7 Like it very much

4. How informative did you find this ad?

Not informative at all 1 2 3 4 5 6 7 Very informative

5. This ad has appeals to me and makes me relate to the product on a sensory level...

Not at all 1 2 3 4 5 6 7 Very much so

6. This ad gets me to think and relate to the product on an emotional/intellectual level...

Not at all 1 2 3 4 5 6 7 Very much so

Soy Yoghurt

- An exciting alternative to traditional dairy yoghurt
- It contains all natural ingredients
- It is cholesterol free and it is high in potassium
- It is made with certified organic and non-GMO soybeans
- It is available in a handy individual serving.
- Luscious and tasty fruit flavours combine to establish a yoghurt unlike all others.

1. Considering the above description, please estimate how much you might like this product:

I would not like it at all 1 2 3 4 5 6 7 I would like it a lot

2. Considering the above information, how likely might you be to purchase this product?

I definitely would not buy it 1 2 3 4 5 6 7 I definitely would buy it

3. Overall, how much did you like this ad?

Did not like at all 1 2 3 4 5 6 7 Like it very much

4. How informative did you find this ad?

Not informative at all 1 2 3 4 5 6 7 Very informative

5. This ad has appeals to my and makes me relate to the product on a sensory level...

Not at all 1 2 3 4 5 6 7 Very much so

6. This ad gets me to think and relate to the product on an emotional/intellectual level...

Not at all 1 2 3 4 5 6 7 Very much so

Now that you have examined both of the advertisements,

1. Which option would you choose to eat?

- ☐ the home-style yoghurt
☐ the soy yoghurt

2. Now imagine that you have an individual serving (one cup) of the option you just chose. How much do you think you will consume?

- ☐ one bite ☐ half of the cup ☐ the entire cup

3. How confident are you that you chose the product that will give you the most pleasure?

Not Confident at all 1 2 3 4 5 6 7 Very Confident

4. Do you feel your selection is influenced by your prior knowledge or experience with one or both of the alternatives?

Not at All 1 2 3 4 5 6 7 Very Much So

5. I found that the mental images I had when reading the descriptions of the two alternatives were:

Not Clear 1 2 3 4 5 6 7 Very Clear
At All

6. I found that picturing the various alternatives was:

Very Easy 1 2 3 4 5 6 7 Very Difficult

Section C

In this section we are seeking your reaction to different print advertisements. You are asked to consider ads for two different products, followed by questions related to each of the ads. Please read the information provided on each of the alternatives carefully before responding.

We do request that you be careful and well-reasoned when responding to the questions that follow. Please don't let your imagination get the better of you. Rather, **try to make a logical assessment of the items presented.**

Imagine that you are selecting something to eat. You are considering the following two alternatives:

Plain Milk Chocolate

- This is a delicious creamy milk chocolate.
- It is made with a rich blend of sugar, cocoa liquor, cocoa butter, and fresh milk ingredients.
- It contains 30% cocoa mass.
- It is available in a 45g bar
- It makes a convenient and satisfying snack at any time of day.
- Eating this bar is truly a rich experience.

1. Considering the above description, please estimate how much you might like this product:

I would not like it at all 1 2 3 4 5 6 7 I would like it a lot

2. Considering the above information, how likely might you be to purchase this product?

I definitely would not buy it 1 2 3 4 5 6 7 I definitely would buy it

3. Overall, how much did you like this ad?

Did not like at all 1 2 3 4 5 6 7 Like it very much

4. How informative did you find this ad?

Not informative at all 1 2 3 4 5 6 7 Very informative

5. This ad has appeals to my and makes me relate to the product on a sensory level...

Not at all 1 2 3 4 5 6 7 Very much so

6. This ad gets me to think and relate to the product on an emotional/intellectual level...

Not at all 1 2 3 4 5 6 7 Very much so

Peppercorn Flavoured Chocolate

- This is a rich, luscious chocolate.
- It is made with the finest ingredients, including sugar, cocoa liquor, cocoa butter, and fresh milk ingredients.
- It contains 35% cocoa mass.
- It is available in a 45g bar
- It makes a delicious treat at any time.
- Fresh peppercorns give this chocolate a spicy flare.

1. Considering the above description, please estimate how much you might like this product:

I would not like it at all 1 2 3 4 5 6 7 I would like it a lot

2. Considering the above information, how likely might you be to purchase this product?

I definitely would not buy it 1 2 3 4 5 6 7 I definitely would buy it

3. Overall, how much did you like this ad?

Did not like at all 1 2 3 4 5 6 7 Like it very much

4. How informative did you find this ad?

Not informative at all 1 2 3 4 5 6 7 Very informative

5. This ad has appeals to my and makes me relate to the product on a sensory level...

Not at all 1 2 3 4 5 6 7 Very much so

6. This ad gets me to think and relate to the product on an emotional/intellectual level...

Not at all 1 2 3 4 5 6 7 Very much so

Now that you have read these product descriptions,

1. Which option would you choose to eat?

- ☐ plain milk chocolate
☐ peppercorn flavoured chocolate

2. Now imagine that you have one 45g bar (an individual bar) of the product you chose. How much do you think you will consume as a mid-day snack?

- ☐ one bite ☐ half of the bar ☐ the entire bar

3. How confident are you that you chose the product that will give you the most pleasure?

Not Confident at all 1 2 3 4 5 6 7 Very Confident

4. Do you feel your selection is influenced by your prior knowledge or experience with one or both of the alternatives?

Not at All 1 2 3 4 5 6 7 Very Much So

5. I found that the mental images I had when reading the descriptions of the two alternatives were:

Not Clear 1 2 3 4 5 6 7 Very Clear
At All

6. I found that picturing the various alternatives was:

Very Easy 1 2 3 4 5 6 7 Very Difficult

7. How hungry are you at this moment?

Not hungry 1 2 3 4 5 6 7 Extremely Hungry
At All

Thank you for your participation!

APPENDIX B
STUDY 2 ADVERTISEMENTS
Familiar Yoghurt - Sensory

Home-Style Yoghurt



It contains no artificial ingredients. It is high in potassium and cholesterol free.

It is available in a convenient individual serving.

A variety of *delicious* and *tasty* fruit flavours help to create a very *pleasurable experience*.

Made with *rich* dairy ingredients, this is a *fun alternative* to traditional yoghurt.

Novel Yoghurt - Sensory

Soy Yoghurt



contains all natural
ingredients and is cholesterol
free and high in potassium.

Luscious and tasty
fruit flavours
combine to
establish a yoghurt
unlike all others.

It is available in a
handy individual
serving

Made with certified organic and non-GMO
soybeans, this is an *exciting alternative* to
traditional dairy yoghurt.

Home-Style Yoghurt

This is a *fun alternative* to traditional yoghurt. It contains no artificial ingredients and is high in potassium and is cholesterol free. It is made with *rich* dairy ingredients.



It is available in a convenient individual serving. A variety of *delicious and tasty* fruit flavours help to create a very *pleasurable experience*.

Soy Yoghurt

This is an *exciting alternative* to traditional dairy yoghurt. It contains all natural ingredients and is cholesterol free and high in potassium. It is made with certified organic and non-GMO soybeans.

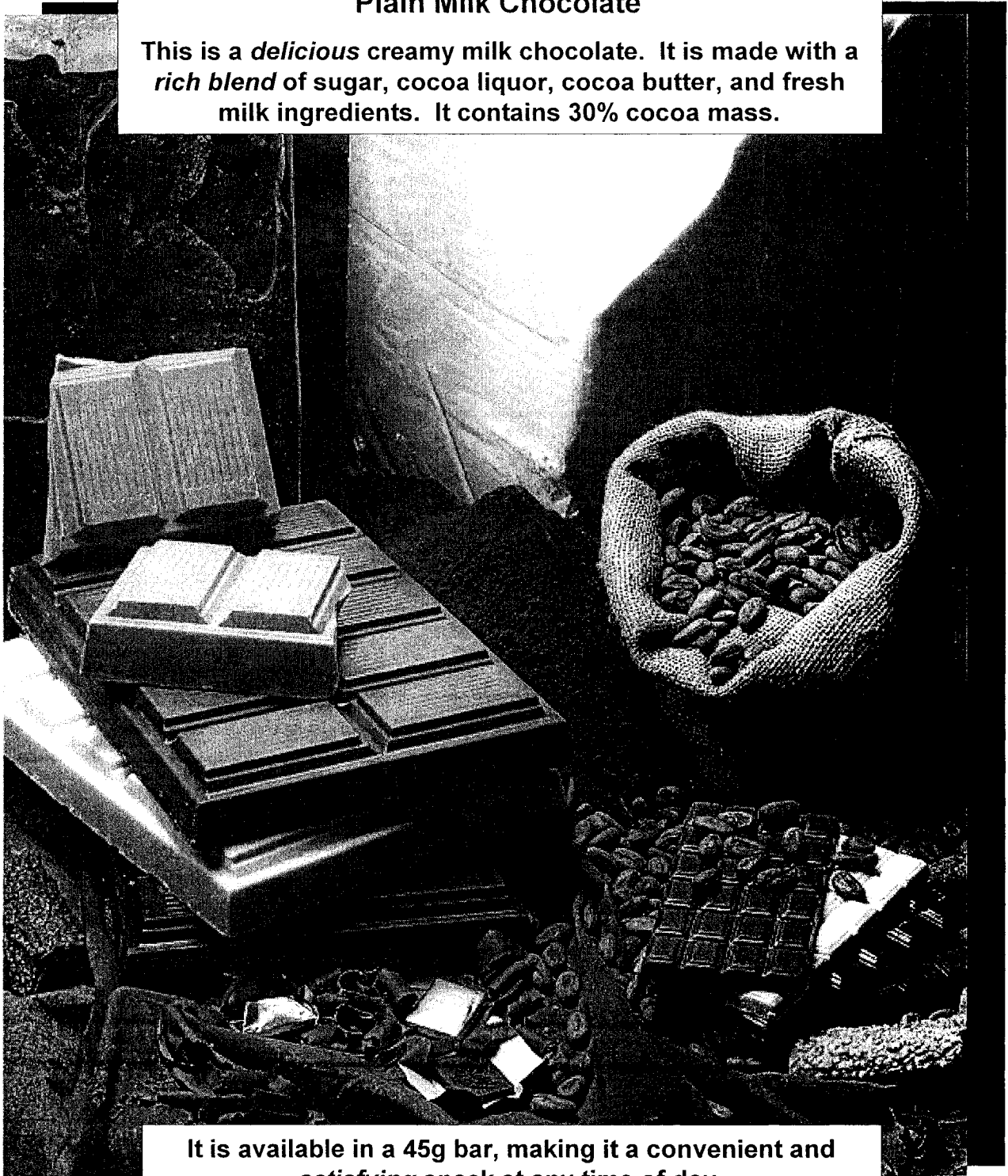


It is available in a handy individual serving. *Luscious* and *tasty* fruit flavours combine to establish a yoghurt unlike all others.

Familiar Chocolate - Sensory

Plain Milk Chocolate

This is a *delicious* creamy milk chocolate. It is made with a *rich blend* of sugar, cocoa liquor, cocoa butter, and fresh milk ingredients. It contains 30% cocoa mass.



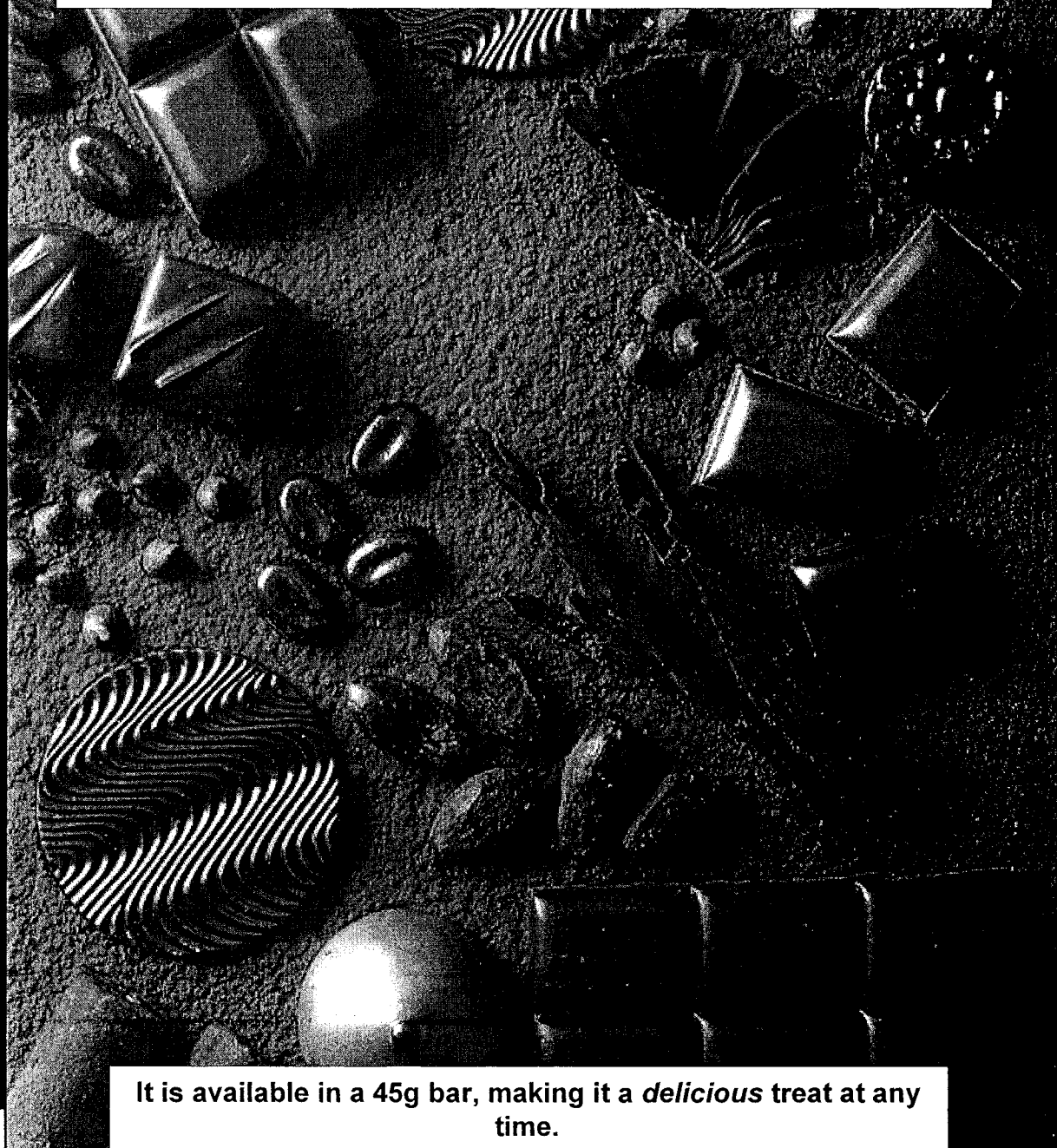
It is available in a 45g bar, making it a convenient and *satisfying* snack at any time of day.

Eating this bar is truly a *rich experience*.

Novel Chocolate - Sensory

Peppercorn Flavoured Chocolate

This is a *rich, luscious* chocolate. It is made with the finest ingredients, including sugar, cocoa liquor, cocoa butter, and fresh milk ingredients. It contains 35% cocoa mass.



It is available in a 45g bar, making it a *delicious* treat at any time.

Fresh peppercorns give this chocolate a *spicy flare*.

Plain Milk Chocolate

This is a *delicious* creamy milk chocolate. It is made with a *rich blend* of sugar, cocoa liquor, cocoa butter, and fresh milk. It contains 30% cocoa mass.



It is available in a 45g bar, making it a convenient and *satisfying* snack at any time of day.

Eating this bar is truly a *rich experience*.

Peppercorn Flavoured Chocolate

This is a *rich, luscious* chocolate. It is made with the finest ingredients, including sugar, cocoa liquor, cocoa butter, and fresh milk ingredients. It contains 35% cocoa mass.



It is available in a 45g bar, making it a *delicious* treat at any time.

Fresh peppercorns give this chocolate a *spicy flare*.